

Eastwick Intermodal Center



January 2020



The Delaware Valley Regional Planning Commission

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Plans from the early 2000s to expand SEPTA's Eastwick Regional Rail Station into an Intermodal Center have resurfaced in light of the Philadelphia City Planning Commission's (PCPC) recommendation in its 2016 *Lower Southwest District Plan* to implement an Eastwick Intermodal Center and of SEPTA's upcoming Trolley Modernization. Previous plans have suggested SEPTA's nearby Route 36 trolley terminus be extended to Eastwick Station. The City of Philadelphia and SEPTA are preparing to replace trolley vehicles with modern vehicles and are designing for the infrastructure necessary for those vehicles. With *Trolley Modernization* comes the opportunity to evaluate trolley extension proposals, like the Route 36 trolley to Eastwick Station. DVRPC prepared this report for SEPTA and the City of Philadelphia to examine what opportunities are created by an intermodal facility, at or near Eastwick Station, within the approximately decade-long Trolley Modernization timeframe.

This plan recommends several strategies for Eastwick Intermodal Center that offer benefits to multiple community and agency stakeholders, potentially including:

› **Build Eastwick Intermodal Center**

A new intermodal facility would centralize several SEPTA services in one location to make connections between modes simpler for passengers. Passenger and employee amenities like restrooms, ticketing windows, and shelters would support these consolidated transit connections.

Regional Rail, trolley, and bus service would be accessible and fully ADA-compliant at Eastwick Station, as would pedestrian connections to the Eastwick community. A remade Eastwick Station would complete high-level platforms for the entire Airport Line, reducing the number of SEPTA conductors needed to staff the line.

› **Extend Trolley Route 36**

A new rail connection between West and Southwest Philadelphia and Philadelphia International Airport (PHL) would serve residents who live along the Route 36 corridor and work at or near PHL.

› **Procure double-ended vehicles for Trolley Modernization**

Double-ended trolley vehicles create end-of-line flexibility when considering expansions and realignments of the trolley network.

› **Consolidate support facilities for buses in one location**

Create a dedicated space for buses to layover without the dependency and expense of using private property.

› **Separate freight and passenger rail along the Airport Line**

Freight separation allows for a greater span of passenger service, a partial step toward increasing service frequency, and allows the flexibility to increase freight rail activity in the future.

› **Foster transit-supportive development that serves the Eastwick community**

Eastwick Intermodal Center would feature efficient transit connections to both PHL and Center City, along with parking to serve regional park-and-ride commuters. An increase in activity on-site due to an increased span of regional rail service and more transfer opportunities would make for a more attractive and greater feeling of personal safety. The ability to attract transit-oriented commercial development on-site could serve both passengers and the Eastwick community.

› **Build safe, useful bicycle and pedestrian facilities**

The addition of network changes to bicycle and pedestrian facilities, signal timing, and intersection improvements could make connections between the Eastwick Station and adjacent neighborhoods more attractive for all modes.

› **Improve transit access to Philadelphia International Airport for travelers and employees**

Provide PHL customers and employees incentives to take transit as part or all of their trip to and from PHL.

Figure 1 proposes a site plan that would allow for these opportunities. Realizing an Eastwick Intermodal Center that incorporates the elements shown in the proposed site plan will take action from many public and private organizations. By working together, including with the Eastwick community, the full potential benefits can be realized.

The implementation steps that would support the realization of the proposed site plan as shown are as follows:

- › Assemble real estate for Eastwick Intermodal Center
- › Improve Airport Line frequency and span of Service
- › Design and build Eastwick Intermodal Center station infrastructure
- › Extend Trolley Route 36 to Eastwick Intermodal Center
- › Use the Lower Eastwick Public Land Strategy as a basis for development and community outreach
- › Redesign the Eastwick area bus network
- › Support Eastwick Intermodal Center as a regional priority
- › Bring PHL employees to work via Eastwick Intermodal Center
- › Improve bicycle and pedestrian infrastructure around Eastwick Station
- › Connect Eastwick Intermodal Center to the John Heinz National Wildlife Refuge at Tinicum

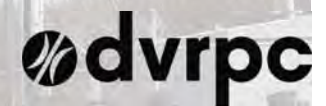
Figure 1 | Proposed Site Plan



Aerial image source: City of Philadelphia aerial imagery, 2017



CHAPTER 1: INTRODUCTION

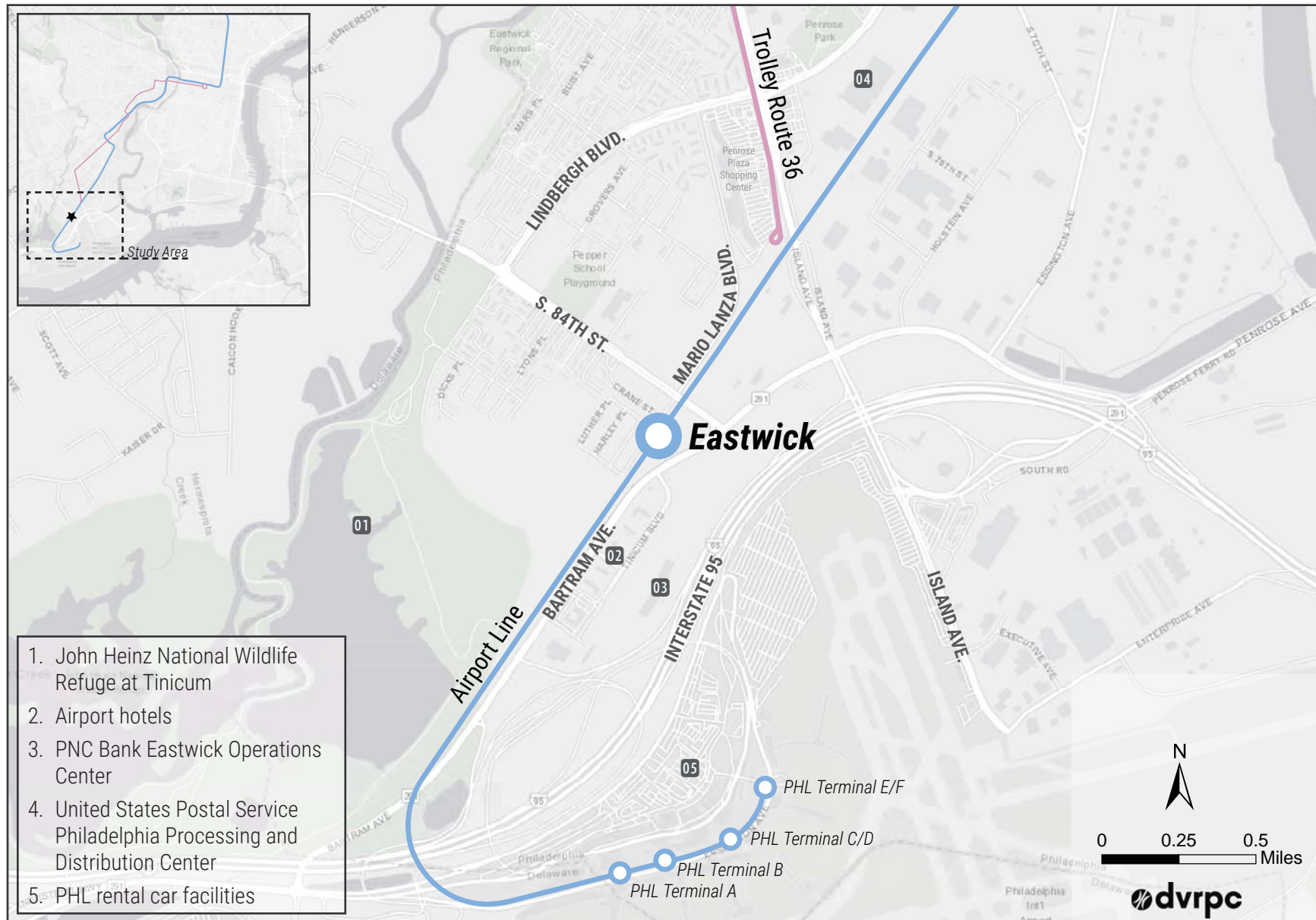


STUDY PURPOSE

SEPTA's Eastwick Station, in Southwest Philadelphia, is served by the Airport Regional Rail line. Ideas to expand Eastwick Station into an intermodal transit hub have been discussed and identified in plans for years. Previous plans have proposed extending SEPTA's Route 36 trolley to the Eastwick Station to bridge the approximately half-mile gap between the two services. Most recently, the Philadelphia City Planning Commission (PCPC) recommended an Eastwick Intermodal Center (EIC) in the 2016 *Lower Southwest District Plan*.

As SEPTA plans for their upcoming trolley vehicle fleet replacement, called "Trolley Modernization," changes to the trolley network, including extensions, are being considered for their utility and timeliness as it relates to Trolley Modernization implementation.

The purpose of this study is to assist SEPTA and the City of Philadelphia in understanding the opportunities created by replacing Eastwick Station with an intermodal facility within the approximately decade-long Trolley Modernization timeframe.

Figure 2 | Eastwick Study Area

STUDY AREA

Eastwick Station is located in the Eastwick neighborhood of Southwest Philadelphia in the vicinity of PHL, Interstate 95, and the Heinz Wildlife Refuge (Figure 2).

Land Use

Eastwick Station is surrounded by residential areas to the west and northwest, commercial and transportation areas to the south, and industrial areas to the east (Figure 3).

Most of the land immediately surrounding the station, particularly to the west, is undeveloped and is owned by the Philadelphia Redevelopment Authority (PRA) and the School District of Philadelphia (SDP). Southwest of Eastwick Station is the John Heinz National Wildlife Refuge at Tinicum, located along the Tinicum Marsh. Most of this undeveloped residential area was taken for urban renewal through eminent domain in the 1950s, forcing several thousand residents to relocate, then sold to a developer, and never built on. Southeast of the Airport Line, most of the land is owned by the City of Philadelphia and is part of the Philadelphia International Airport (PHL).

Across Bartram Avenue from the station are six hotels, PNC Bank's Eastwick Center, and airport employee parking. The Penrose Shopping Center, a strip shopping plaza, and the terminus of the Route 36 trolley, are approximately half a mile northeast of the station along Mario Lanza Boulevard.

Employment

A number of employment locations exist within a mile of the Eastwick Station, many associated with PHL, with strong concentrations in the Transportation and Warehousing, Health Care and Social Assistance, and Accommodation and Food Service industries (Figure 4). Several larger commercial employment locations exist at Penrose Plaza near the end of SEPTA's Route 36 Trolley Line; more are located just east of the trolley loop. The Eastwick neighborhood, near 84th Street and Lindbergh Boulevard is home to dozens of smaller (0–25 employee) employment locations.



PNC Bank's Eastwick Center on Tinicum Boulevard.



Residences at 86th Street and Gibson Place.

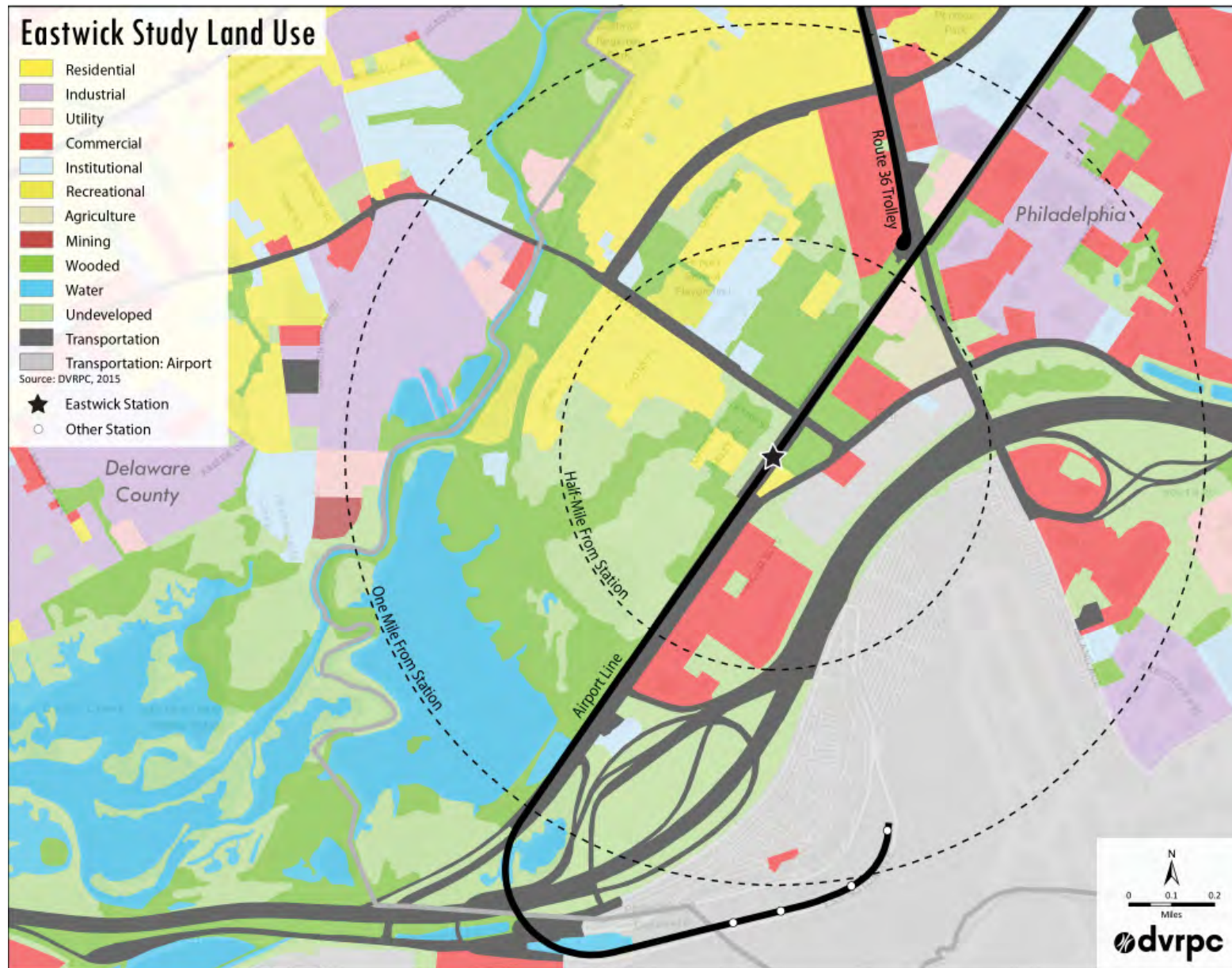
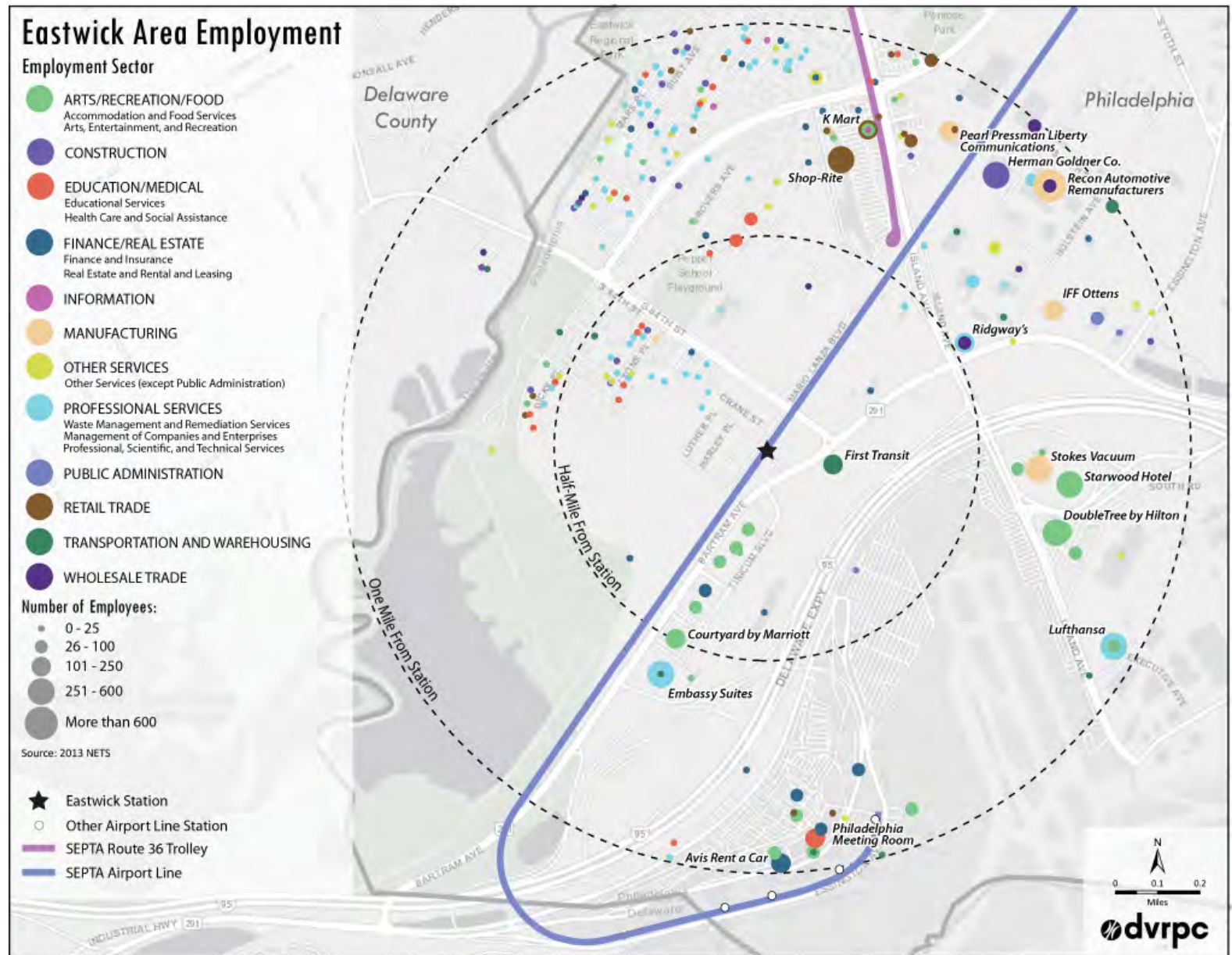
Figure 3 | Eastwick Area Land Use

Figure 4 | Eastwick Area Employment





Route 36 Trolley loop along Island Avenue.



Employees arriving by SEPTA bus to the UPS site near PHL

Penrose Plaza

Approximately 0.7 miles away to the northeast of Eastwick Station is the Penrose Shopping Plaza, which is located between Mario Lanza Boulevard, Island Avenue and Lindbergh Boulevard. The auto-oriented plaza features a supermarket, banks, fast food restaurants, and a gym. Beyond the plaza to the west, much of the land is owned by PRA and is either undeveloped or has residential properties such as the Larchwood Garden Apartments. The Route 36 trolley terminates in a nearby loop (Figure 2), accessible via a frontage road that was built when Island Avenue was bridged over the Airport Line in 1985.

Philadelphia International Airport (PHL)

The Philadelphia International Airport terminals are located approximately 1 mile south from Eastwick Station. The airport and associated businesses (parking, hotel, and food services) are roughly bounded by Interstate 95 to the north and the Delaware River to the south (Figure 2). Some lower-cost parking, hotels, and rental car companies have opened north of I-95 in the area east of the Airport Line and south of 63rd Street. Other businesses in the airport area include the Philadelphia Wholesale Produce Market, a large petroleum storage facility, auto salvage operations, and shipping services such as the U.S. Postal Service, UPS and DHL. The airport is one of the 20 busiest in the United States with nearly 30 million annual passengers and 450,000 tons of air freight (2017). The airport employs approximately 20,000 people.

Airport employees live throughout the 9-county DVRPC region (see Figure 6). Concentrations of PHL employees exist in lower Northeast Philadelphia, Southwest Philadelphia, and eastern Delaware County. Employees who live in each of these locations who use transit to get to work are more likely to use SEPTA's bus network, rather than the 36 trolley or Airport Line. Local SEPTA bus routes, including Routes 37, 68, 108, and 115, connect these areas where PHL employees live directly to the airport terminals—unlike Trolley Route 36—and at a cheaper fare than Regional Rail. In the past, SEPTA's fare structure allowed the

Airport Line and stops at PHL to be accessed with a TransPass, the most economical pass. In July 2019, SEPTA updated their fares so that weekday travel on the Airport Line is now required to be a Zone 1 or higher ticket or Weekly or Monthly TrailPass. This increased the cost for passengers accessing PHL via regional rail.

Employees who drive to work have access to the free employee parking lot on Bartram Avenue and can use the free employee shuttle to access the terminals.

Passenger and Freight Rail Operations

The City of Philadelphia owns the Airport Line right-of-way between the Northeast Corridor and PHL. A CSX-owned, single-track freight line meets the Airport Line approximately 1 mile south of Eastwick Station (along Bartram Avenue near the Exit 12B I-95 off-ramp), then diverges from the Airport Line approximately 3.5 miles to the northeast (near South 61st Street and Lindbergh Boulevard).

SEPTA is responsible for dispatching and rail operations on the Airport Line, and allows freight trains to use the line during a four-hour, overnight window. Both freight and passenger service are limited by this track-sharing arrangement. During times of higher demand for freight service, SEPTA is often pressed to expand the window for freight operations.

Figure 5 | Airport Line Freight Use

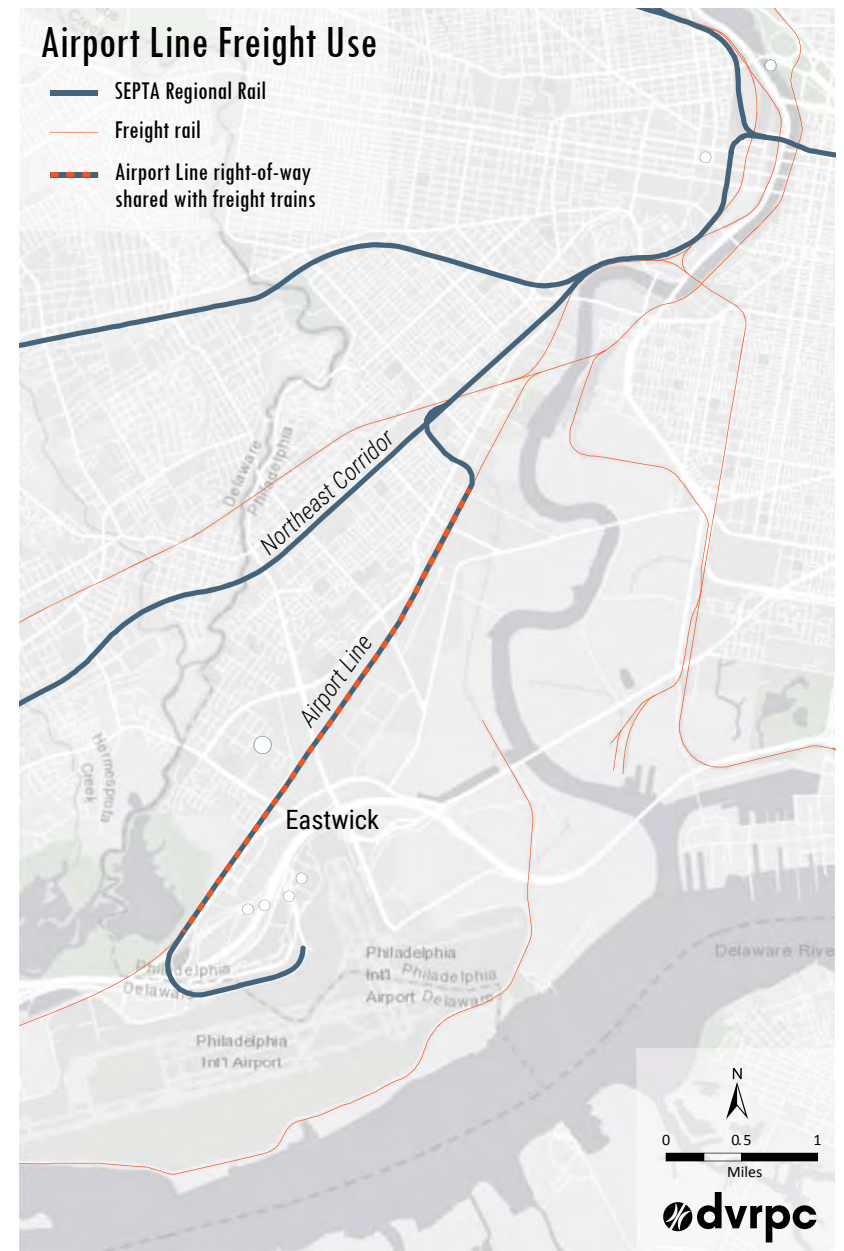
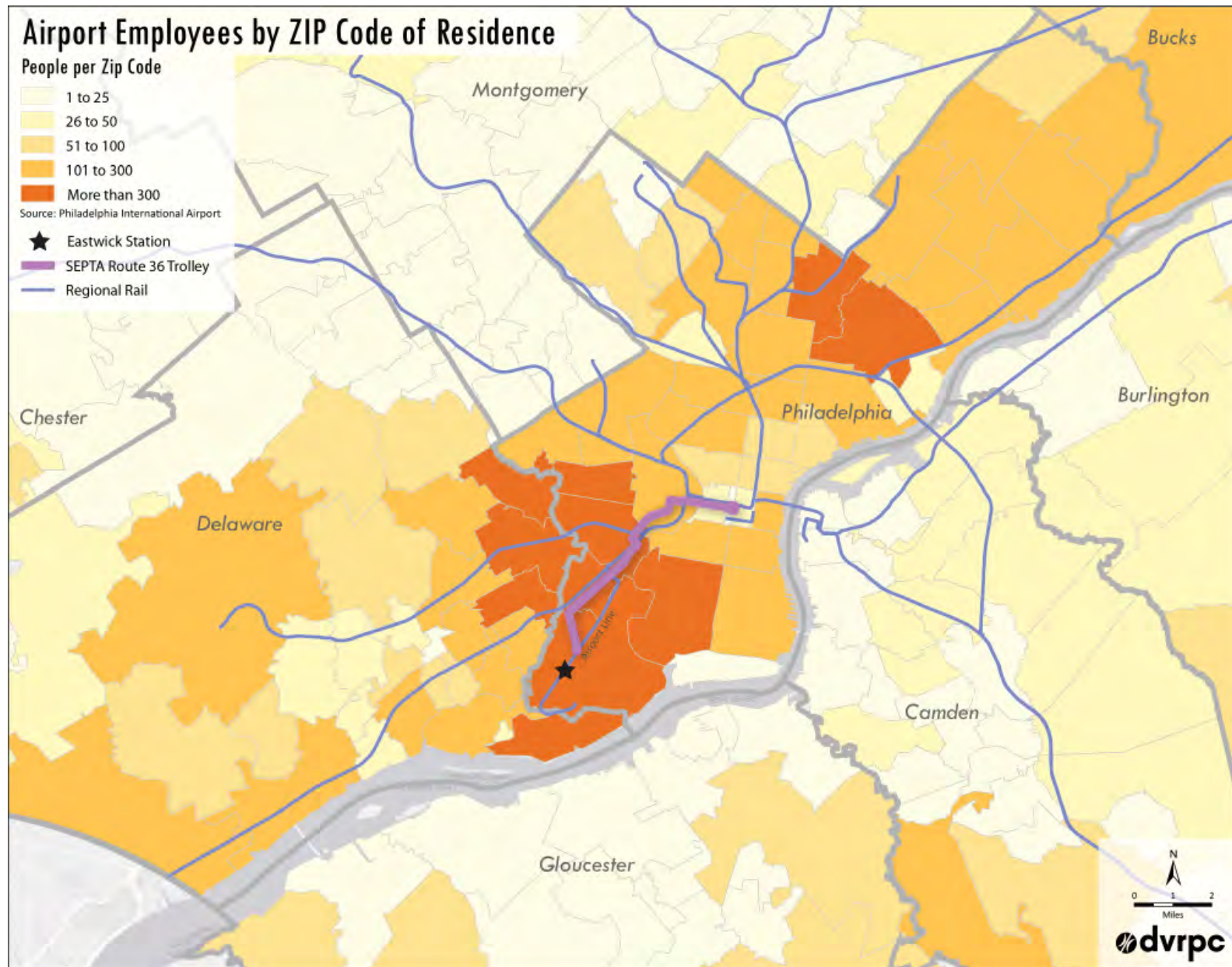
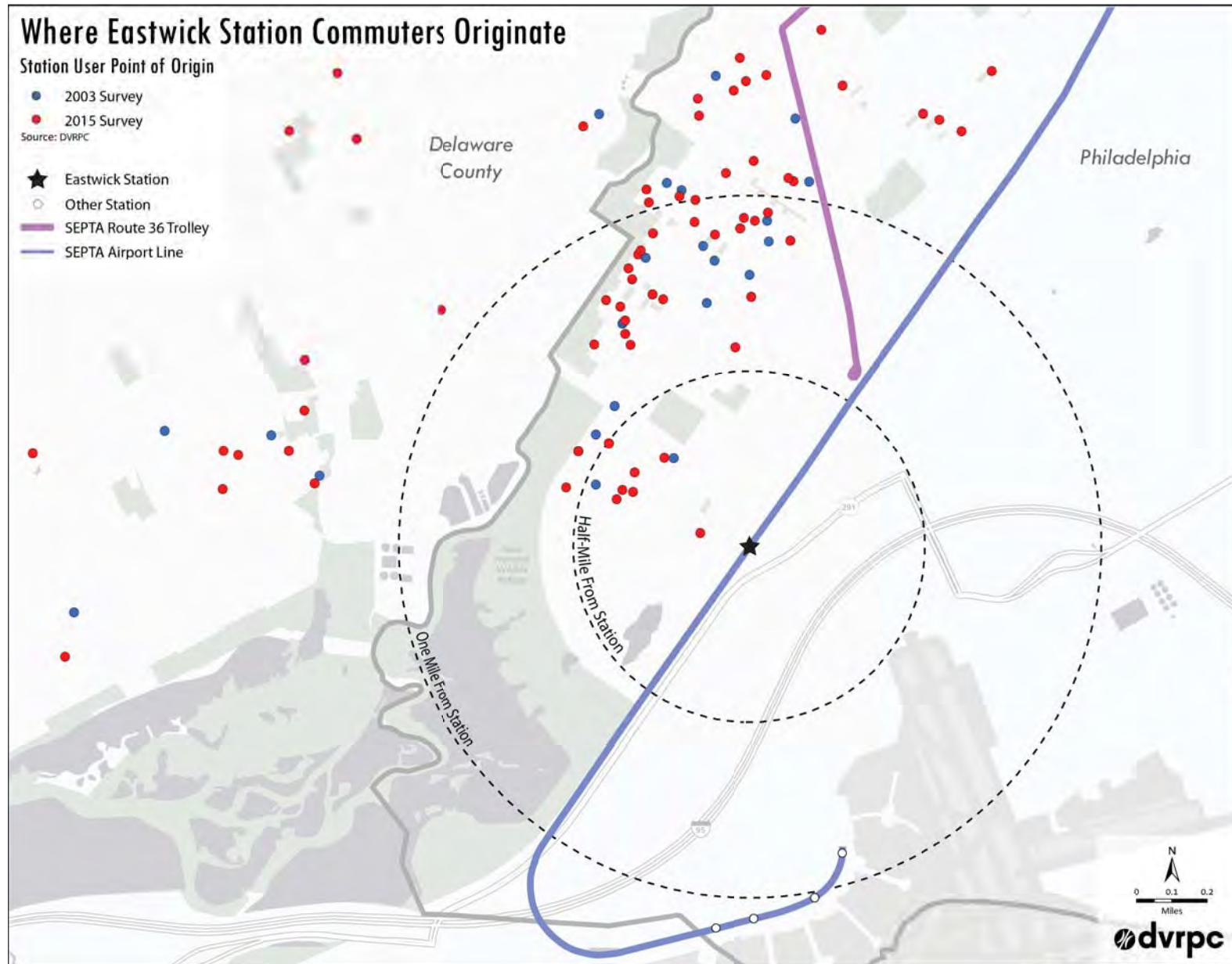


Figure 6 | Airport Employees by ZIP Code of Residence

EASTWICK STATION

Commuter Origins

DVRPC provides park-and-ride passenger origins data for train stations and park-and-ride lots within the region in order to understand how far, and from where, people drive to the station. The data is gathered by recording license plate numbers parked at the station and then sending the numbers to state departments of transportation to anonymously geocode the data to preserve people's privacy. DVRPC conducted two of these surveys at Eastwick Station, one in 2003 and another in 2015. Data showed that most of the riders at Eastwick Station that arrive by car live in the Eastwick or Elmwood neighborhoods, just to the northwest and north of the station (Figure 7). These riders drive on average about 1- to 1.5-miles to get to the station. Many riders also drive from eastern Delaware County communities such as Essington, Folcroft, and Sharon Hill. These drivers travel on average about 1 to 5 miles to get to the station.

Figure 7 | Eastwick Station Park-and-Ride Origins

Platform

Eastwick Station is an accessible facility with two low-level wooden side platforms outfitted with ramps so each side provides ADA-compliant access to a single rail car door. The rest of the doors require passengers to climb steps. This arrangement is sometimes called a “mini high” platform. Station platforms are connected by a walkway across the tracks. The wooden platforms were meant to be temporary when they were built in 1997 in response to the opening of the new PNC Bank Operations Center at 88th Street and Tinicum Boulevard.

Parking and Drop-Off

There is no official SEPTA parking at Eastwick Station. Passengers park along Mario Lanza Boulevard, which does not require permits or payment. There are “No Stopping” signs posted on South 85th St, South 86th Street, and Eastwick Avenue—streets with private residences on them.

There is a station driveway on the south side of the station accessible from Bartram Avenue. Some passengers are also dropped off on the Mario Lanza Boulevard side.

More details on the locations and fill rates of on-street passenger parking are outlined in the Field Work Observations section of this Chapter.



The two low-level wooden platforms at Eastwick Station with shelters and ADA-accessible boarding ramp.



On-street parking along Mario Lanza Boulevard.



Pedestrian access to Eastwick Station.



Crane Street sidewalk.

Bicycle and Pedestrian Access

Sidewalks are inconsistent near Eastwick Station which makes for poor connections to the adjacent neighborhood. There are no direct pedestrian connections to a single business or home in the area. On the south side of the station, sidewalks exist on the east side of Bartram Avenue continuing northeast to 84th Street. One painted crosswalk at the intersection with Tinicum Boulevard exists but there is no sidewalk connecting this intersection to Eastwick Station. A sidewalk (photo at left) connects the station to a Route 37/68/108/115 bus stop, but to nothing else.

On the north side of the station, a sidewalk exists on the west side of Mario Lanza Boulevard but stops short of the station at Crane Street. A sidewalk on the east side of Crane Street is overgrown with weeds and refuse and is virtually impassible. A signalized intersection with crosswalks exists at the intersection of 84th and Crane Streets.

In accordance with its *Cycle-Transit Plan*, SEPTA provides one U-rack at the outbound platform entrance to lock up to two bikes. Bike lanes exist on 84th Street, Mario Lanza Boulevard and Bartram Avenue, but each has a high Level of Traffic Stress (LTS), especially Bartram Avenue, which has an LTS of 4 out of 4, the highest degree of traffic stress for cyclists. LTS is a road classification system based on the comfort of bicyclists riding in street. DVRPC's LTS assignment is based on the number of lanes, effective vehicle speed, and presence/type of bicycle facility. (See table below.)

Table 1: Bicycle Level of Traffic Stress

LTS	Comfortable Enough For (Cyclist Type)	Characteristics
1	Most People	Relaxing; suitable for children
2	Interested, but Concerned	Suitable for most adults; presenting little traffic stress
3	Enthusied and Confident	Moderate traffic stress; comfortable for those already riding bikes in American cities
4	Strong and Fearless	High traffic stress; multi-lane, fast moving traffic

Sources: Mekuria, M., Furth, P. and Nixon, H. "Low-stress bicycling and network connectivity," Mineta Transportation Institute, No. Report 11-19, 2012.; Geller, R. "Four Types of Cyclists," Portland Bureau of Transportation, Portland, OR, 2006. www.portlandoregon.gov/transportation/article/264746. Accessed August 11, 2016.

TRANSPORTATION SERVICES

In addition to the Airport Line itself, Eastwick Station is served by four SEPTA bus routes and various private shuttles (Figure 8). The Airport Line was put in place in 1985 by the City of Philadelphia and SEPTA in an effort to provide rail service to the airport—ahead of many other cities that later provided similar access to their airports. The line and its stations are owned by the City of Philadelphia.

Airport Line

The Airport Line makes four stops at the airport terminals before continuing inbound to Center City with stops at Eastwick and University City. While some trains start and end in Center City, most continue on to, or originate on, the Warminster Line. The Airport Line runs every 30 minutes, seven days a week, from 4:00 AM to 1:00 AM. The trip length from Suburban Station to the airport Terminal B is 19–24 minutes.

In 2018, SEPTA's Airport Line was ranked ninth across all thirteen Regional Rail lines with 6,075 daily average weekday passengers on the line.¹ At Eastwick Station, specifically since 2011, ridership is steadily increasing, other than a slight decrease in 2017 (See Table 2).² A vast majority of the ridership from the Eastwick Station boards the train to go inbound to University and Center City; only a small portion of riders at Eastwick are taking the Airport Line to and from the Airport.

Table 2: Eastwick Station Weekday Average Boards and Alights				
Year	Outbound to Airport		Inbound to Center City	
	Boards	Alights	Boards	Alights
2011	5	334	336	7
2013	3	411	364	10
2015	4	403	395	3
2017	6	398	348	2

Sources: SEPTA Route Statistics (2018)¹ and SEPTA Regional Rail Census 2011, 2013, 2015, and 2017.²

Bus Routes

Eastwick Station is served by Routes 37, 68, 108, and 115 in the southwest-bound direction at a sheltered bus stop on Bartram Avenue accessible via the drop-off loop on the inbound side of the station. There are no safe crossings of Bartram Avenue to reach the buses traveling in the northeast-bound direction.

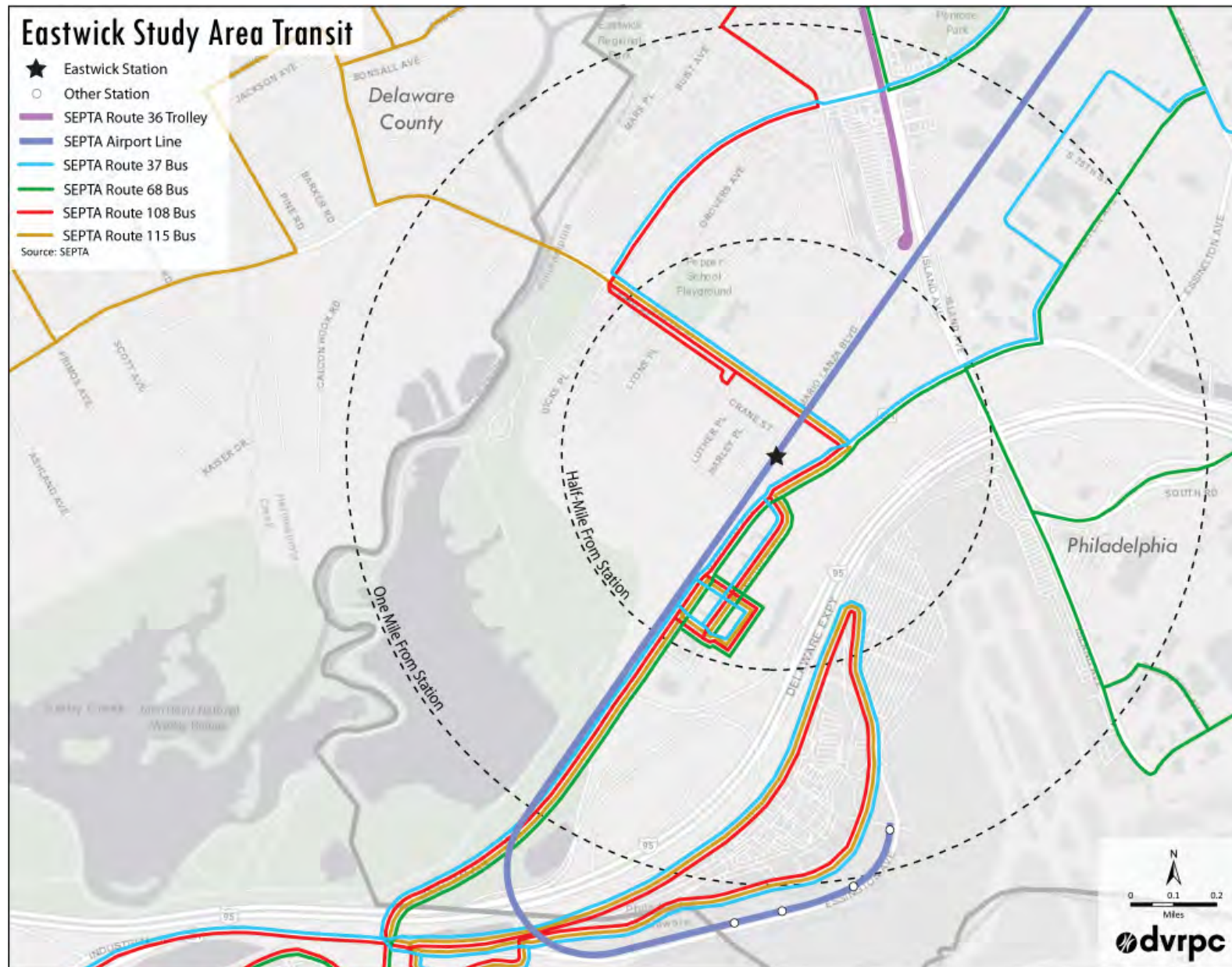
Route 37 operates from South Philadelphia (Snyder BSL Station) to the Chester Transportation Center 24 hours a day, 7 days a week, with 12–60 minute headways. The full trip takes 54–68 minutes, with longer travel times during peak hours due to traffic and passenger dwell time.

Route 68 operates from South Philadelphia (Oregon BSL Station) to the 69th Street Transportation Center on weekdays 24 hours a day with 30–60 minute headways and on weekends from 3:00 AM to 2:00 AM (5:00 AM start on Sundays) with 70 minute headways. The full trip takes 62–71 minutes, with longer travel times during peak hours due to traffic and passenger dwell time.

Route 108 operates from the Airport to the 69th Street Transportation Center 24 hours a day, 7 days a week, with 15–60 minute headways. The full trip takes 39–59 minutes, with longer travel times during peak hours due to traffic and passenger dwell time.

Route 115 operates from the Airport to Delaware County Community College via the Darby Transportation Center from 4:00 AM to 1:00 AM on weekdays with 30–60 minute headways and on weekends from 5:30 AM to 1:30 AM with 60 minute headways. Route 115 only operates between Darby Transportation Center and PHL on weekends. The full trip takes 75–95 minutes, with longer travel times during peak hours due to traffic and passenger dwell time.

Figure 8 | Eastwick Study Area Transit



Route 36 Trolley

Route 36 operates from the 80th Street and Eastwick Avenue Loop to Center City through the trolley tunnel 24 hours a day, 7 days a week, with 4–32 minute headways. The trip from the Eastwick Avenue Loop to the 13th Street Trolley Station in Center City at the end of the line is scheduled to take 35–42 minutes, with longer travel times during peak hours due to traffic and passenger dwell time.

SEPTA’s Route 36 trolley ranked 8th in 2018 for daily weekday average ridership across all Philadelphia City trolley and bus routes. The total weekday average ridership for this trolley route is 12,856 passengers. The last two stations on the Route 36, Lindbergh Boulevard and Island Avenue and Island and Suffolk avenues, are two of the route’s highest ridership stops outside Center City and are also the closest stops to Eastwick Station.

Hotel and Business Shuttles

Many of the businesses along Bartram Avenue, such as the airport hotels and PNC Bank’s Eastwick Center, provide shuttle service to and from Eastwick Station. PNC Bank’s Eastwick Center offers a scheduled weekday service whereas the airport hotels offer on-demand or by-request service.

PHL Employee Shuttle

PHL offers badged employees a free shuttle between their employee parking lot on Bartram Avenue and the airport. Service runs every 5–8 minutes 24 hours a day.

Transferring Between Transit Routes

While there are many transit routes that serve the area around Eastwick Station, the only substantial transfer activity is between Trolley Route 36 and Bus Route 108 at Lindbergh Boulevard and Island Avenue (Figure 9). There is little transfer activity between Route 36 and the Airport Line Regional Rail at Eastwick due to the distance between the two routes (0.7 miles) as well as lack of sidewalks and wayfinding.

Figure 9 | Transfer Activity between Trolley and Regional Rail at Eastwick

Percentage of riders on Trolley Route 36 who transfer to:		Percentage of riders on the Airport Line who transfer to:	
Airport Line	0.03%	Trolley Route 36	0.38%
Market-Frankford Line	25.0%	Warminster Line	28.0%
Broad Street Line	21.4%	Market-Frankford Line	9.1%
Bus Route 37	0.4%	Bus Route 37	0.7%
Bus Route 68	0.0%	Bus Route 68	0.0%
Bus Route 108	18.6%	Bus Route 108	0.6%
Bus Route 115	0.0%	Bus Route 115	0.4%

Source: 2010-2012 On Board Survey

SUMMARY OF PREVIOUS PLANS

A number of studies have been completed since the creation of the Airport Line exploring how to best serve the residents and employers in the Eastwick area. The *2016 Lower Southwest District Plan*, prepared by the Philadelphia City Planning Commission, recommends improving bicycle and pedestrian connectivity, making the station more of an official “Park-and-Ride,” as well as exploring the possibility of extending the Route 36 trolley to connect with Eastwick Station. Other studies are detailed below.

Eastwick Transportation Center Needs Assessment and Conceptual Design Study – Federal Transit Administration – February 2001

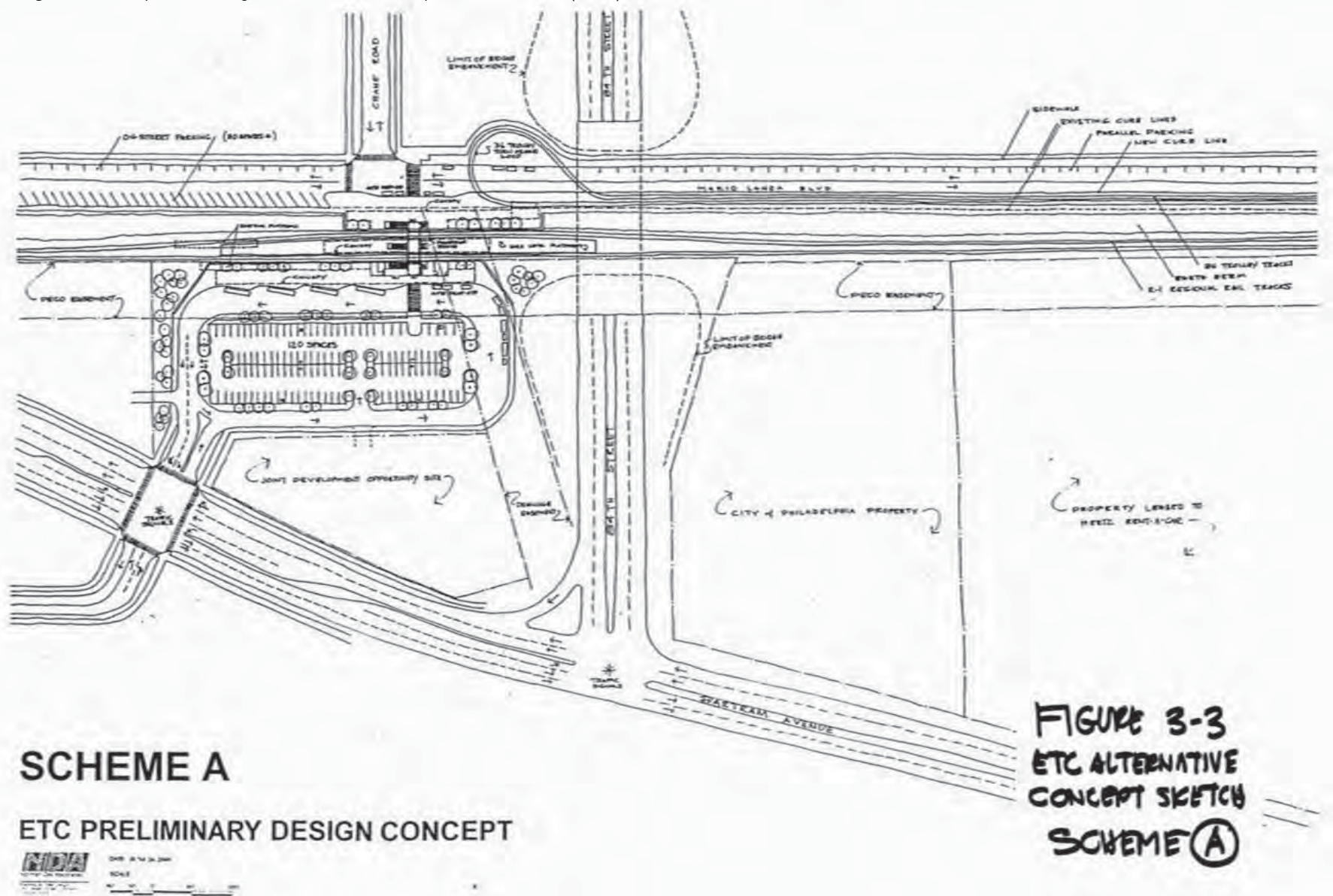
Following up on a 1981 study for the Department of Public Property, which recommended three new stations along the Airport Line at 61st, 70th, and 84th streets, SEPTA sought to assess the need, scope, and scale of a new intermodal transportation center along the line in the vicinity of 84th Street or Island Avenue.

The study looked at four alternative locations (two at 84th Street and two at Island Avenue), but determined that the best site for an intermodal center would be at the current Eastwick Station site. This decision was based on rating the four alternatives on a set of 18 criteria, including “Access from Major Roads”, “Engineering Concerns”, and “Impact on Residents.” The proposed station area would be located on the same site as the existing one but would expand into the undeveloped area near 84th Street. The proposed station would feature a high-level platform, four bus berths, a 120-space commuter parking lot, a waiting area, and a pedestrian bridge over the tracks. As part of the new center, the Route 36 trolley would be extended to the north side of the station and sidewalks would be built to better connect the area (Figure 10). With an \$11.6 million budget (in 2001 dollars) and concerns about funding sources, the plan proposed a two-phase implementation with the major part of phase two being the high-level platforms, pedestrian bridge, and shifted northern track.

Airport Area Transit Study – Philadelphia City Planning Commission (PCPC) / Delaware Valley Regional Planning Commission (DVRPC) – June 2001

Published soon after the February 2001 SEPTA study, this next study for PCPC and DVRPC looked at the entire airport area from both a transportation and land-use perspective. The transportation improvements included a summary of the February 2001 plan for the new Eastwick Intermodal Transportation Center as well as modifications to the Airport Line and bus transportation. Improvements to the Airport Line included adding a 70th Street station, adding the Airport Line stations to the TransPass, and increasing frequency. Bus service changes included frequency improvements to current bus routes, the addition of local shuttles, and the addition of new bus routes. The land-use section proposed transit-oriented development changes to three study areas: the Tinicum Boulevard Development Area, where the six hotels and the PNC Bank Eastwick Center are now located; an undeveloped industrial area between Bartram Avenue and I-95 to the northeast of Island Avenue, and; a vacant residential area north of the intersection of 84th Street and the Airport Line tracks, east of Pepper Middle School.

Figure 10 | Proposed Design for Eastwick Transportation Center (2001)



Source: Norman Day Associates, 2001

Increasing Intermodal Access to Transit — Delaware Valley Regional Planning Commission — 2006

Looking at access to transit at a number of locations, this study examines the current pedestrian and bicycle accessibility to Eastwick Station as well as makes recommendations for improvements. Using Pedestrian and Bicycle Level of Service (PLOS and BLOS), the study assigns a score and grade to the road segments that connect the station to the surrounding area. The report acknowledges that most of the current nonmotorized accessibility is due to the lack of automobile traffic on certain residential streets rather than any bicycle or pedestrian infrastructure. The study recommends constructing new sidewalks to better connect the residential and commercial areas to the station, better debris clearance on existing sidewalks, and a crosswalk on Bartram Avenue that would allow pedestrians and bicyclists to access the commercial strip along Bartram Avenue between Tinicum Boulevard and the Interstate 95 off-ramp for Exit 12B.

Eastwick Station Regional Transit Hub Evaluation and Recommendations — Edward J. Bloustein School of Planning and Public Policy Studio Seminar — 2017

This report focuses on the existing SEPTA Bus Routes 37, 68, 108, and 115 and how those routes could better serve residents and workers and proposes a new circulator route that would serve the airport, the Eastwick Regional Rail station, and businesses in the Eastwick area.

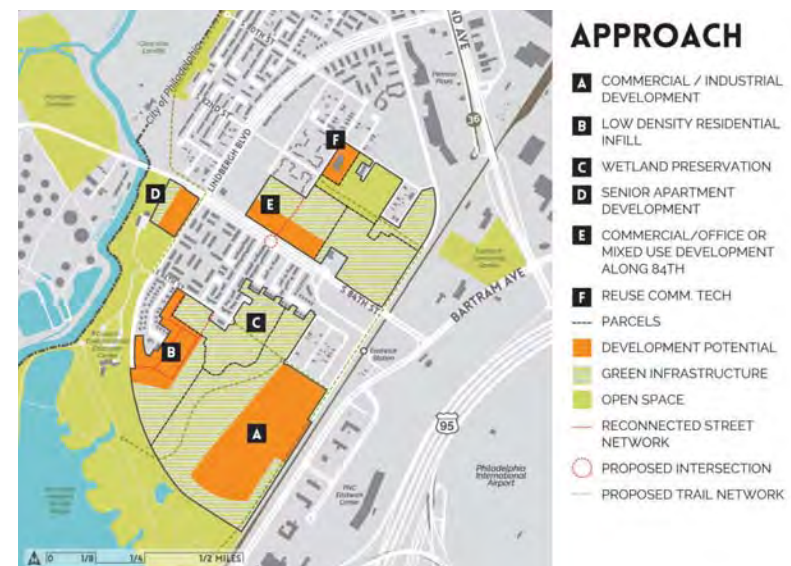
Recommendations focus on simplifying complex route variations and reducing the amount of service that serves off-route locations. Stops are proposed to be eliminated that are no longer served with proposed route changes, have low ridership, and that are less than a quarter mile from other stops.

Lower Eastwick Public Land Strategy — 2019

The Philadelphia Redevelopment Authority and the City of Philadelphia released the Lower Eastwick Public Land Strategy in March 2019. The report focuses on identifying community goals, understanding the environmental and site constraints, and evaluating what the market can support on the publicly-owned land in the Eastwick neighborhood. The report acknowledges that development in the area is limited by both market conditions and by flood risk—a risk expected to become more acute as sea levels rise in the coming decades.

The report recommends a reconfigured intersection on 84th Street, which would facilitate safe pedestrian access to Eastwick Station. Beyond transportation issues, the report evaluated potential future uses of several large sites, each on the west side of the Airport Line. Most relevant to this project, the Public Land Strategy recommends commercial or industrial development on a parcel one block southwest of Eastwick Station. If realized, Eastwick could be a destination for many workers with easy access to both PHL and Center City via SEPTA.

Figure 11 | Lower Eastwick Public Land Strategy Development Approach



Source: PRA, Interface Studio, 2019

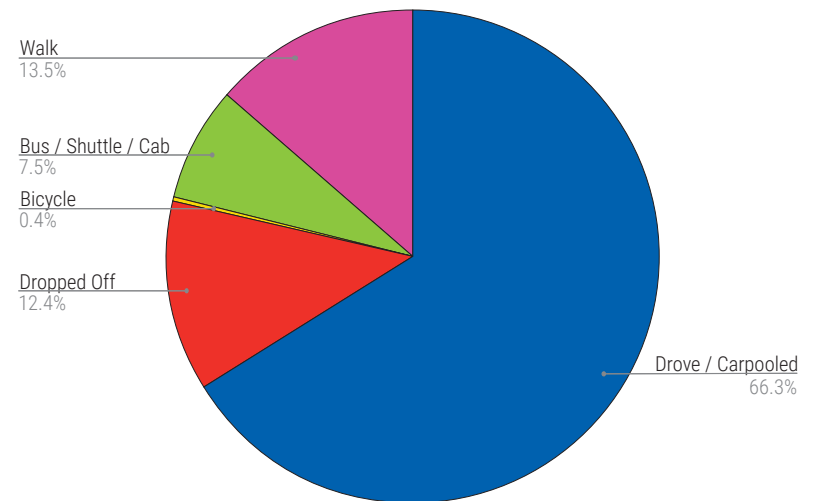
STATION AREA OBSERVATIONS

In order to better understand how Airport Line riders access Eastwick Station, the project team observed and recorded pedestrian, bicycle, bus, shuttle, drop-off, and parking activity during a morning peak period (6:00 AM–10:00 AM) in mid-May 2018. Data collectors observed as people entered the station area and noted what mode of transportation they used to arrive at the station. The project team also noted how many and what percentage of the available parking spaces were occupied in half-hour increments (Figure 13, page 22). Finally, team members noted the frequency and level of use of private shuttles.

Modes of Access

During this morning peak period, over two-thirds of the 267 observed passengers arrived by and parked on the streets north of the station. The number of riders that walked to the station was roughly equal to the number that were dropped off—13 and 12 percent, respectively. Riders that arrived by bus, shuttle, or cab was approximately half of the number that walked—7 percent. Passengers that arrived by bicycle accounted for less than 1 percent of riders (Figure 12).

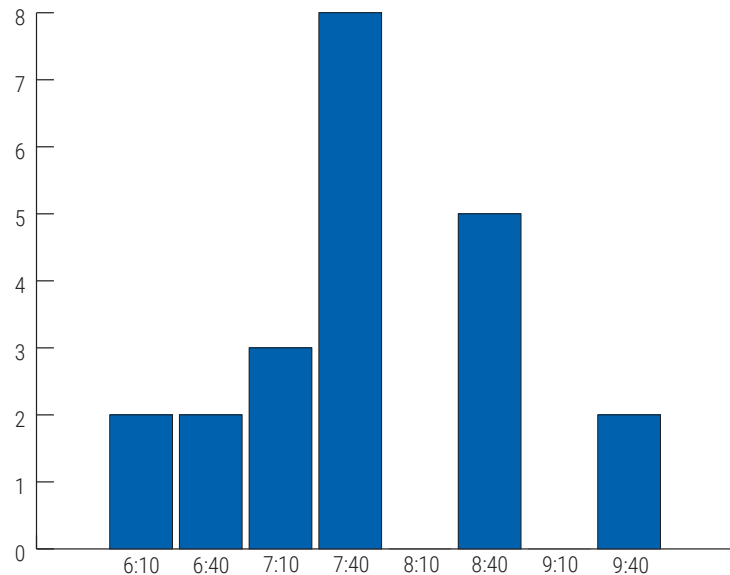
Figure 12 | How Transit Riders Get to Eastwick Station



Source: DVRPC, 2018

Figure 13 | Parking Area Fill Rates

Source, aerial imagery: Bing Maps, 2018

Figure 14 | Shuttle Passenger Boards by Time at Eastwick Station

Source: DVRPC, 2018

On-Street Parking

There is no official parking lot or spaces at Eastwick Station. Out of approximately 168 on-street parking spaces located near the station, approximately 106 diagonal and curb-side spaces exist on Mario Lanza Boulevard, immediately adjacent to the north side of the station. Another 62 spaces exist on Crane Street and 86th Street.

Shuttles

During the observation period, 22 passengers alighted from the Airport Line to board a private shuttle service (Figure 14). The six hotels on Bartram Avenue, the PNC Bank Eastwick Center, and the airport car rental agencies offer shuttle services. Hotel shuttles are offered by request whereas the PNC Bank shuttle has half-hour service from 6:10 AM – 9:44 AM and 3:00 PM – 6:30 PM.

TRAVEL PATTERNS

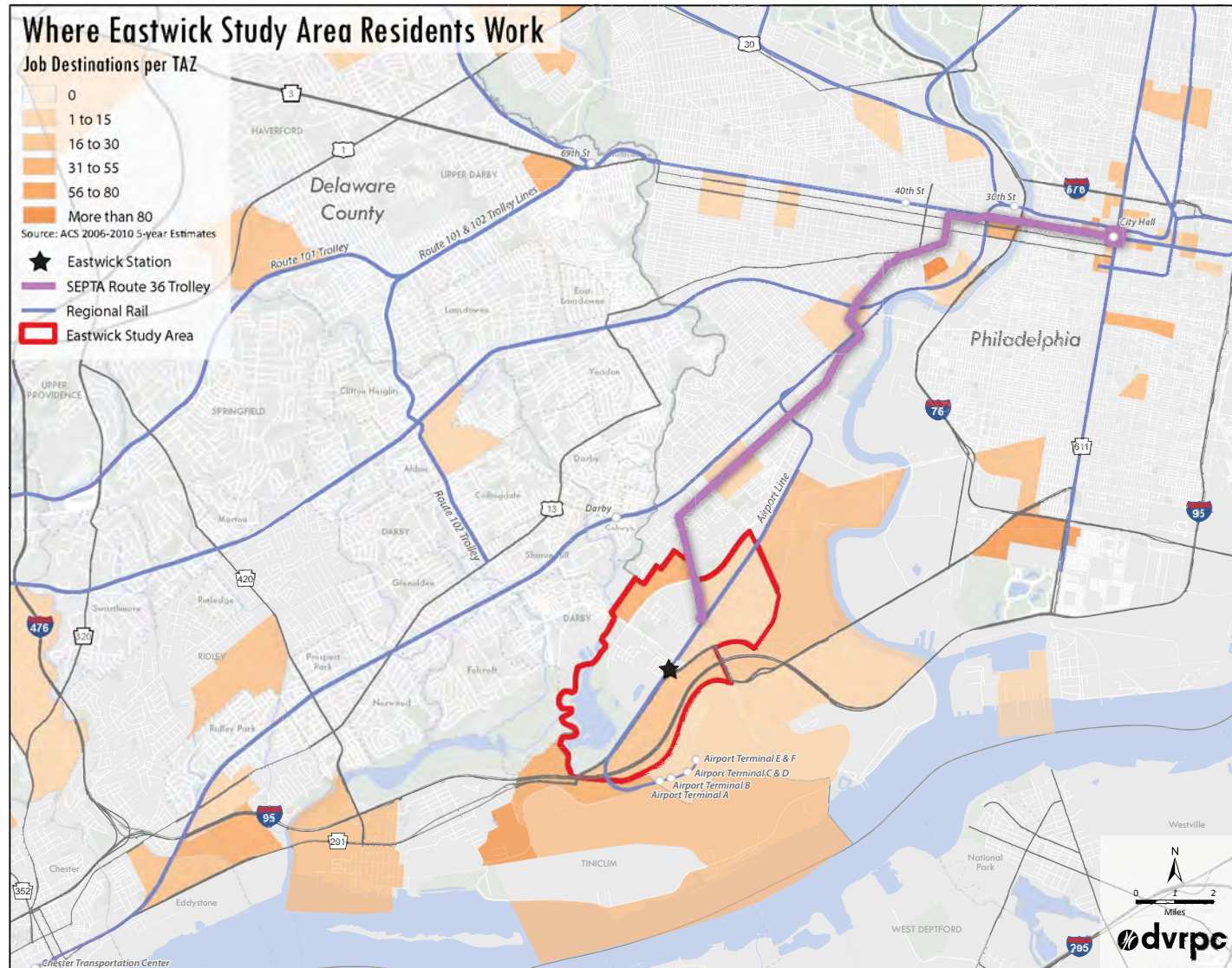
In order to get a sense of how people travel in Eastwick, it is important to understand their origins and destinations. Since most people travel to and from their home and work on most days, these are key origins and destinations. The first two maps, Figure 15 and Figure 16, show where people that live in Eastwick work, and where people that work in Eastwick live, respectively. The second set of maps, Figure 17 and Figure 18, show where people that live along the Route 36 corridor work, and where people that work in the Route 36 corridor live, respectively (Source: ACS 2006-2010 5-Year Estimates). Together these findings show us that there is some correlation between the Route 36 corridor and the Eastwick Study area (which includes PHL and nearby large employers): there is a concentration of residents along the Route 36 corridor that work in the Eastwick study area.



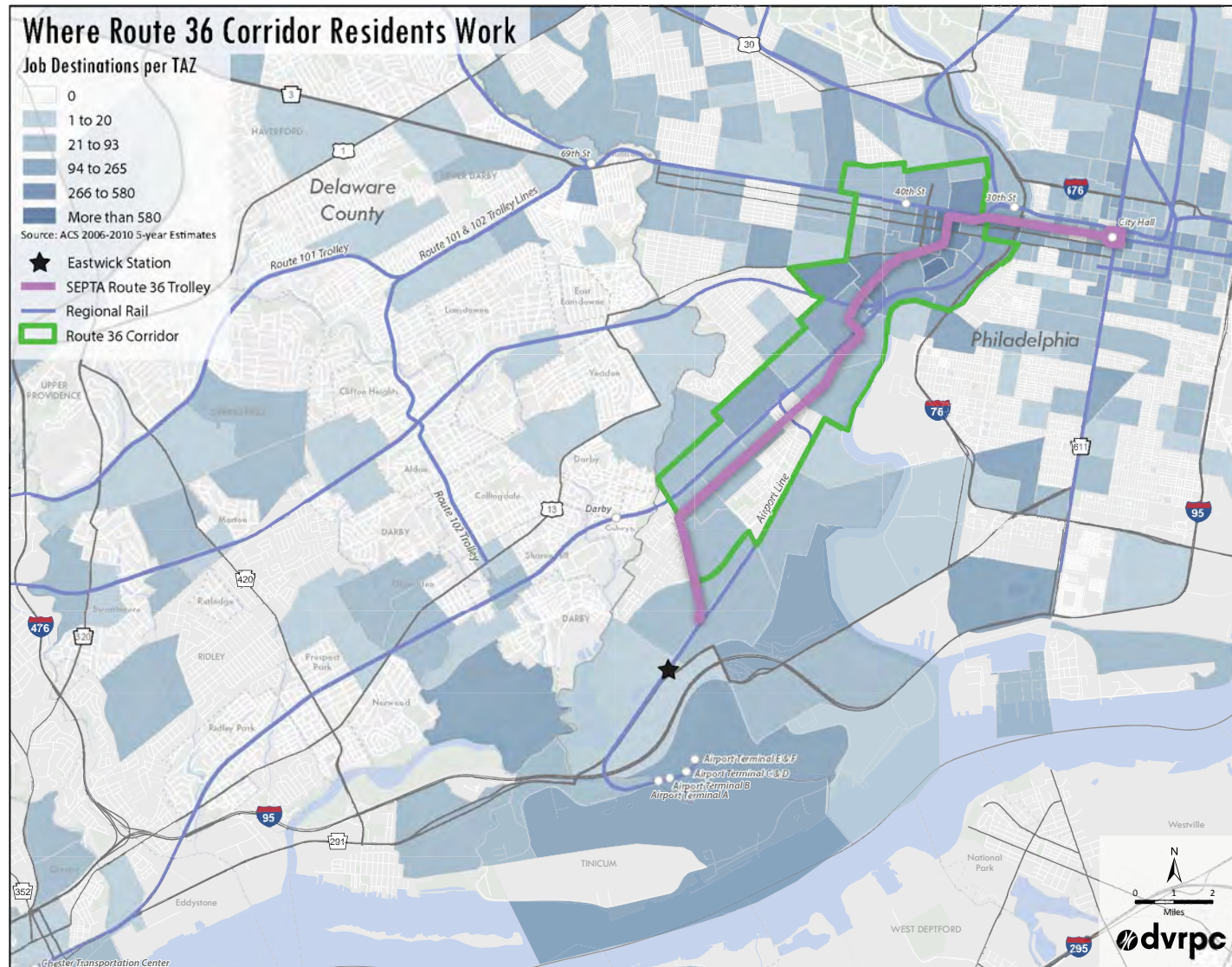
Passengers boarding SEPTA's Airport Line.



A passenger waiting for a bus on Bartram Avenue.

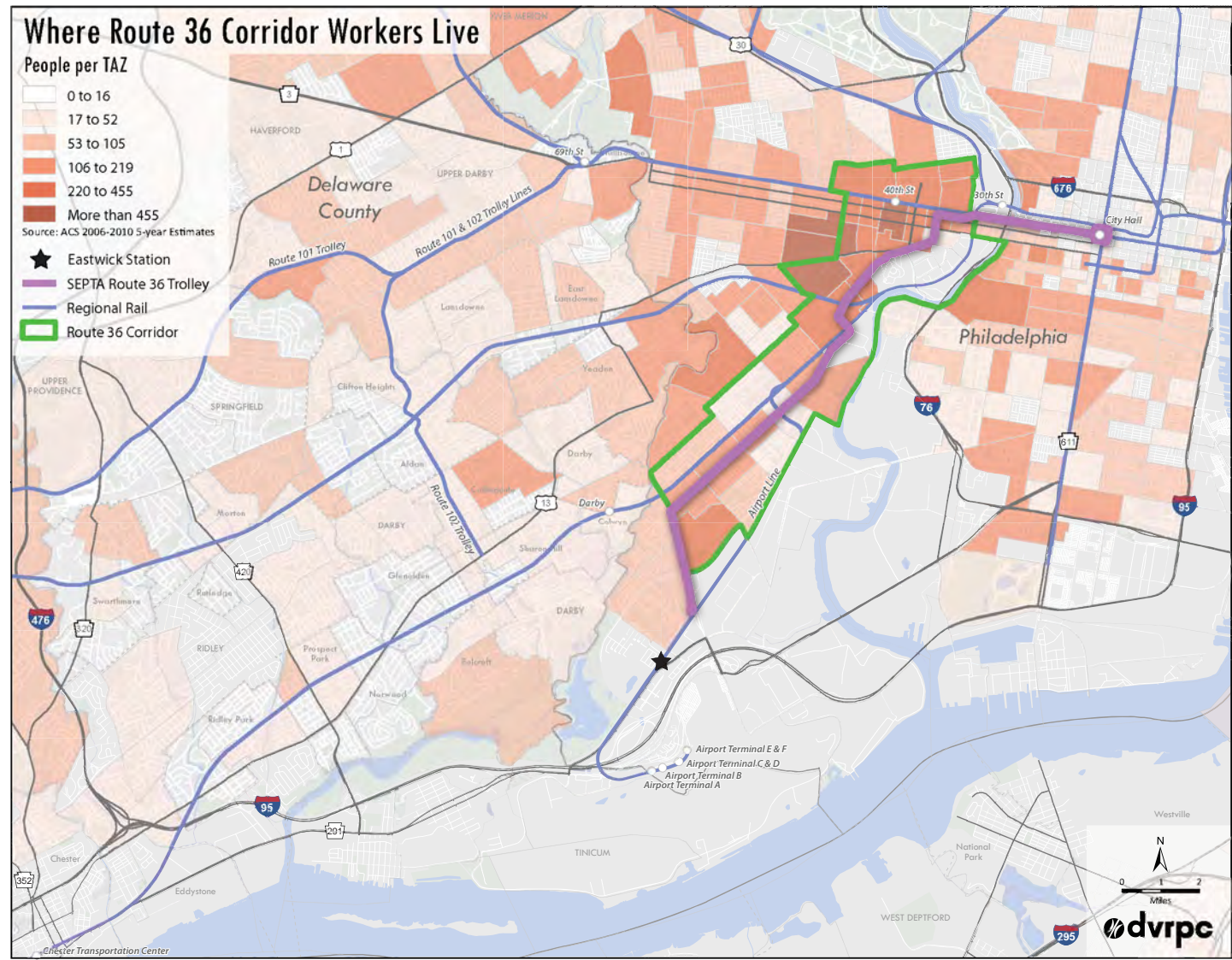
Figure 15 | Eastwick Residents' Employment Locations

Eastwick residents work throughout the region. A concentration of those residents work within the Eastwick Study area, presumably at PHL and large employers along Bartram Avenue. Data does not show a large amount of Eastwick residents working along the Route 36 corridor.

Figure 17 | Route 36 Corridor Residents' Work Locations

Residents within a half-mile of the Route 36 trolley work throughout the region. Route 36 residents work within the Eastwick study area as well as along the Route 36 corridor.

Figure 18 | Route 36 Corridor Employees' Residences



Workers within a half-mile of the Route 36 trolley live throughout the region with some concentration in University City. Data does not show that Route 36 workers live within the Eastwick study area.

THE GAP BETWEEN EXISTING TRANSIT SERVICES

Despite being a transit-rich area, connections in Eastwick between routes are limited. Generally, transit services are proximate but not very convenient for SEPTA passengers to walk from one to another. This limits access for residents, employees, and visitors.

- › Transit frequency and span of service for routes in the Eastwick area are not conducive to useful network-wide transfers. For instance, Route 115 runs with 60-minute or greater headways, and with differing service patterns. Transit routes also tend toward serving individual destinations, such as Route 108's limited weeknight service to UPS.
- › Transferring between Trolley Route 36 and the Airport Line would require a 16-minute, half-mile walk along a Penrose Plaza service road and Mario Lanza Boulevard, neither of which have sidewalks.
- › Transfers between the Airport Line and buses are slightly easier, though not particularly safe. On the inbound, or south side, the station access drive cannot accommodate a bus pulling up to the station. Instead, the southeast-bound Route 37/68/108/115 bus stop is at the end of the station access road along Bartram Avenue, only about 350' away, or a little less than one typical city block length. To reach the bus stop in the other direction, SEPTA riders would have to cross Bartram Avenue (4 lanes, 40 mph speed limit) illegally, or walk about 400' through grass and brush to reach a crosswalk, then travel 400' back in the return direction. On the outbound, or north side, of Eastwick Station the street network is more residential with narrow streets that can't accommodate buses up to the Eastwick Station outbound platform. The closest bus stop here (for SEPTA Routes 37, 108 and 115) is about a quarter of a mile away on 84th Street with no sidewalks along the route.



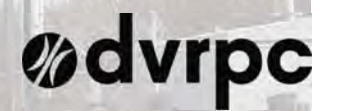
Connection between Eastwick regional rail Station and SEPTA bus stop on Bartram Avenue.

- › Connections are possible between Trolley Route 36 and Bus Route 37 at Island Avenue and Lindbergh Boulevard. Passengers can walk from the center boarding island of the 36 and cross a portion of Island Avenue to the Route 37 stop on Lindbergh Boulevard. Crossing distances are long at this location—at least 125' depending on the direction—and both streets are on the City of Philadelphia's High Injury Network, designating Philadelphia's most dangerous roadways.
- › A transfer fee is also imposed on riders without passes who would transfer between any of these modes.

Simplifying these transit connections would improve passenger convenience and access to employment and services throughout the city. An intermodal center would provide one centralized location for passengers to connect to different SEPTA services.



CHAPTER 2: ANALYSIS



THE VALUE PROPOSITION OF AN EASTWICK INTERMODAL CENTER

By creating an Eastwick Intermodal Center, a number of changes could occur that would benefit multiple stakeholders. Many of the land use and transportation patterns discussed in Chapter 1 shape the various “user groups” that would be served by, or have a stake in, centralizing bus, Regional Rail, and trolley at one location near Eastwick. The user groups from this broad study area include:

- Public transit customers from Delaware County, the Eastwick neighborhood, southwest Philadelphia, and Center City using SEPTA Bus Routes 37, 68, 108, 115, Trolley Route 36, and the Airport Line Regional Rail;
- Employees accessing jobs in southwest Philadelphia;
- Eastwick residents that want to cross the railroad tracks or want additional parking and commercial uses;
- PHL employees and customers;
- SEPTA bus, trolley, and Regional Rail operations;
- The City of Philadelphia;
- The Philadelphia Redevelopment Authority;
- The Heinz Wildlife Refuge employees and visitors; and,
- Freight rail operators and customers.

The improvements on the following pages of this chapter were identified by stakeholders as valuable outcomes of creating an Eastwick Intermodal Center. These outcomes are grouped as Accessibility Improvements or Improvements to the Public Realm.



Bi-directional, shared passenger/freight rail track at the Eastwick Station.

Accessibility Improvements

Separation of freight and passenger rail along the Airport Line:

As pointed out in Chapter 1, SEPTA and CSX share use of the two tracks along most of the Airport Line which limits the operations of each. If an additional track were added to the shared portion of the rail line as part of creating an Eastwick Intermodal Center, significant improvements could happen for both passenger and freight service. The span of service of the Airport Line could increase because service would not have to halt during hours of freight operation.

Increased span of service means Airport Line trains could make trips late at night and earlier in the morning. Freight service could also expand if needed because service wouldn't be limited to only a few hours of operation.

Freight separation would also be a step toward enabling more frequent passenger rail service along the Airport Line; however, constraints at the Philadelphia Interlocking and a single track at the PHL terminals would still need to be addressed before frequency could increase.



Existing mini-high platform boarding at Eastwick Station.

ADA-compliant Regional Rail platform:

A new Eastwick Intermodal Center would require new platforms in order to provide adequate accessibility. The station is currently partially accessible to passengers with disabilities via a “mini high” platform. High-level platforms would make boarding and alighting easier for all users at each of the trains’ cars, a characteristic of the more widely beneficial principles of Universal Design.

High-level platforms would make boarding easier for those with limited mobility or rolling suitcases, particularly relevant for the Airport Line. A fully ADA-compliant station would also eliminate the existing need for an extra SEPTA employee to ride on board each train. This staff person is required on board trains to flip an ADA hatch that bridges the stairs of the car to meet the partial high-level platform. With high-level, ADA-compliant platforms, no action by SEPTA personnel is needed at stations to assist passengers boarding in wheelchairs thereby reducing an operating expense for SEPTA.

Moreover, building a high-level platform at Eastwick Station would make every station along the Airport Line accessible and ADA-compliant, as all other stations between Temple University and Philadelphia International Airport feature ADA-compliant, high-level platforms.

Trolley access to Eastwick:

Extending the Route 36 trolley from its existing end-of-line to the Eastwick Regional Rail station would connect trolley passengers to Regional Rail, four SEPTA bus routes, and private shuttles—more transfer options than exist at its current location. A central location for trolley, bus, and Regional Rail at Eastwick would make possible a new connection for passengers from West Philadelphia to PHL that does not exist by rail today. As an end-of-line trolley station, SEPTA would also have an opportunity to provide parking, attracting passengers traveling towards West Philadelphia and Center City who might otherwise drive.

For SEPTA, bringing the end of the Route 36 trolley to an Eastwick Intermodal Center could bring operational benefits. A building at Eastwick Intermodal Center could provide support facilities for trolley operators. The historic trolley right-of-way running parallel to Mario Lanza Boulevard offers space to store trolleys while out of service.

Identifying Eastwick Intermodal Center's programmatic requirements can also help SEPTA answer questions about vehicle procurement for Trolley Modernization such as whether to procure single- or double-ended vehicles.

Trolley potential beyond Eastwick - to PHL and Delaware County:

Stakeholders also discussed completely reimagining service to PHL by extending trolley service all the way to PHL terminals. While a considerably costly capital project, trolley service could improve transit service to PHL in ways that Regional Rail service could not. Route 36 runs as frequently as every 4 minutes during peak periods, so service between Center City and the Airport could in theory run more frequently and be convenient for both employees and customers of PHL.

Frequency improvements on the Airport Line are limited by several infrastructure constraints—including conflicts with Northeast Corridor trains at the Philadelphia (PHL) interlocking, and a single-track section on the Airport Line. This means that 20-minute headways on the Airport Line are possible but costly, and 15-minute headways are

possible, but even more costly. While certainly an improvement from today's 30-minute frequency, it is unknown how much that increase in frequency would affect ridership, especially in an environment where transit competes with taxi and ride-hailing services.

On the other hand, travel time between PHL and Center City via trolley would be longer than Regional Rail. Trolleys stop more frequently than Regional Rail and operate in mixed traffic through West Philadelphia before entering the trolley tunnel at 40th Street.

A potential hybrid option for further study could allow for a Route 36 extension to Eastwick, continuing to run Airport Line trains at 30-minute frequency on a single track between Center City and the PHL terminals. The other track between Eastwick and PHL could then be used to run a high-frequency shuttle between PHL and Eastwick, allowing for easy transfers to Route 36. This option would benefit PHL-area workers by providing high-frequency trolley service to PHL via Eastwick, and allow PHL passengers to avoid local service through West Philadelphia by transferring to Regional Rail at Eastwick.

Additional study of PHL terminal and the Center City trolley tunnel operations and capacity could explore this option more fully before an Eastwick Intermodal Center designed for Regional Rail service to PHL is designed or constructed to fully understand the benefits and constraints of a trolley extension to PHL.

Trolley extension could also be considered for routes other than the Route 36. Census and PHL data show that many PHL-area workers live in eastern Delaware County (see Figure 16, p. 25). Extending trolley service between Darby Borough and a new Eastwick Intermodal Center could serve demand in eastern Delaware County to PHL via Eastwick. Much of this track already exists and, with sufficient capacity at the new Eastwick Intermodal Center, riders could have a one seat ride from Darby to Eastwick via Routes 11 and 36. This connection should be considered as part of its own planning study and in conjunction with SEPTA's upcoming reevaluation of its bus network design.

Rail ridership to PHL and nearby large employers:

Making transfers between routes easier would likely benefit overall transit ridership. In particular the extension of the trolley to the Eastwick Intermodal Center would serve a population of residents along the Route 36 corridor who work in the Eastwick Study Area.

American Community Survey (ACS) data shows that, within a half-mile of the Route 36 corridor, there are between 400 and 800 residents who work within the Eastwick Study Area (including the airport and several other large employers). This number can be used as a proxy for potential riders who, if there were an Eastwick Intermodal Center, might take the trolley and transfer to Regional Rail to get to work.

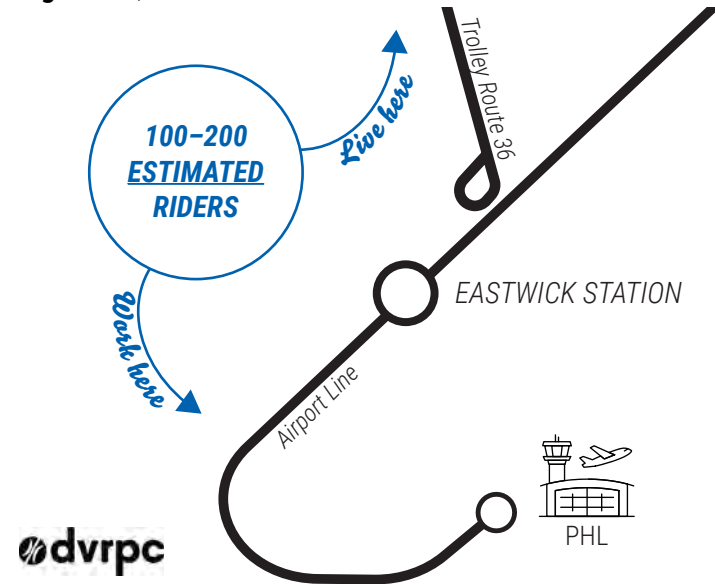
These residents use various modes of transportation to get to work. According to the ACS, on average 26 percent of workers chose transit as a mode choice in the City of Philadelphia. Therefore, the number of anticipated riders might be more like 100–200 riders (~26 percent of the 400–800 potential riders).

Centralized bus service:

An Eastwick Intermodal Center would create a centralized location for SEPTA buses and private shuttles to serve. Currently, the station driveway off of Bartram Avenue cannot accommodate SEPTA's 40' buses but a new access drive could be designed to allow for the necessary turning radii, loading zones, and laying over.

SEPTA frequently has to conduct these operations on private property, locally at the nearby PNC Eastwick Center office campus. This brings with it the uncertainty of increased fees or getting kicked out of the property. Centralizing bus service on public property devoted to transit gives SEPTA autonomy over these operations.

For passengers, it makes connections between bus, shuttle, and rail much easier because the walk between them would be negligible. These connections also open up the potential for riders to connect to more parts of the City of Philadelphia and Delaware County.

Figure 19 | Estimated Potential Riders

Estimated Daily Riders that might use a trolley extension to Eastwick Station.

Transit passenger and operator amenities:

At present, the Eastwick Station, surrounding bus stops, and trolley stops have few amenities for passengers. Only Eastwick Station has parking, which is on-street and not SEPTA parking; it is also the only stop or station to have bicycle parking. The trolley stops along Island Avenue and a few nearby bus stops have a shelter or a canopy.

Lighting, ticketing, wayfinding, and trip information and bathrooms are amenities that are typically included in larger transportation centers. Including facilities in an Eastwick Intermodal Center such as a shelter, bathrooms, ticketing, and auto and bicycle parking would offer SEPTA's bus passengers and operators amenities to improve the comfort and convenience of their overall commute and work day experience.



SEPTA bus operations at the PNC Bank Eastwick Center.

Improvements to the Public Realm

The existing Eastwick Station feels removed from most of the Eastwick neighborhood and from commercial uses along Bartram Avenue. Activity is limited to drive and walk up activity at peak commuting hours. Outside of that time, there are few reasons for people to be at the station. Increasing the activity at the station by providing more transfer options and increasing ridership at the station would increase the vibrancy at the station.

Walking from the Mario Lanza Boulevard (outbound) side to the Bartram Avenue (inbound) side of the station requires crossing the railroad tracks at grade, a difficult task for those with limited mobility. Investing in the physical infrastructure to connect both sides of the neighborhood by making an ADA-compliant overpass with stairs and elevators to cross over the tracks would make crossing from one side of the station to another easier and safer.

From either side of the station to the neighborhood at large, the street network is autocentric. The walk between the station and other destinations lacks sidewalks, sufficient lighting, and suffers from trash dumping particularly along Crane Street. Buses aren't able to pull up to the station area on the existing roads, and the existing intersections at Mario Lanza Boulevard and Crane Street and at Bartram Avenue and Tinicum Boulevard present several conflict points between pedestrians, bicyclists, and vehicles.

An Eastwick Intermodal Center site plan could better differentiate between spaces for each mode and engineer proper access points for buses and cars. New sidewalks, bike lanes, and an access road could make pedestrians and bicyclists feel comfortable and more connected between the station and the Eastwick community. A station with activity from multiple transit modes, a station building, and parking could ensure activity throughout the day, improving safety, and enhancing the public realm.



Inactive area near the Eastwick Station.

Mixed-use Development Opportunities:

Eastwick Intermodal Center could enable development serving both Eastwick residents and station passengers. For Eastwick residents, the area along Bartram Avenue at 84th Street presents a commercial development opportunity that could offer local employment while being located far enough from residents to minimize disruption to residences.

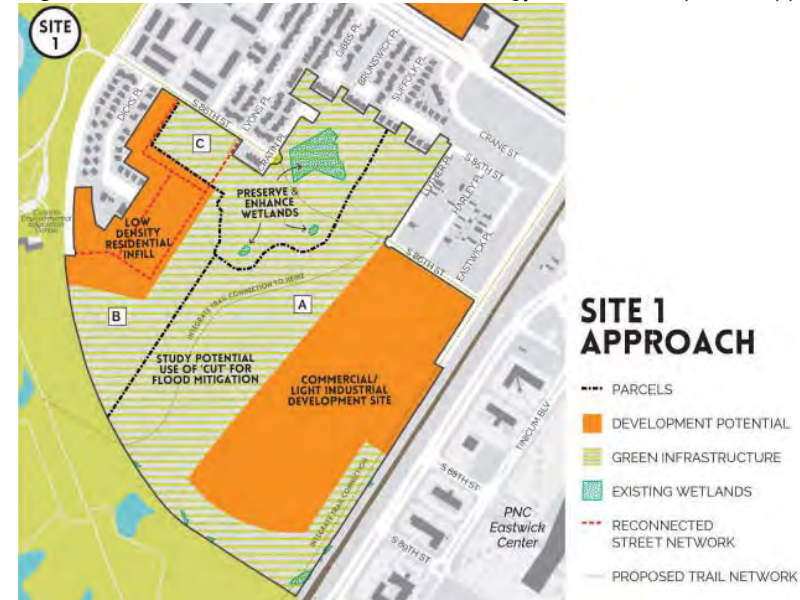
Beyond the station site, Eastwick Intermodal Center is an opportunity to build on PRA's Lower Eastwick Public Land Strategy. In particular, that report identifies a site that is appropriate for commercial or light industrial development (Subparcel A) approximately 700' southwest of Eastwick Station, along 86th Street. Access by a diverse workforce via multiple modes of public transit, and a one-seat ride to either PHL or Center City, would further enhance this site's development potential.

Job Access:

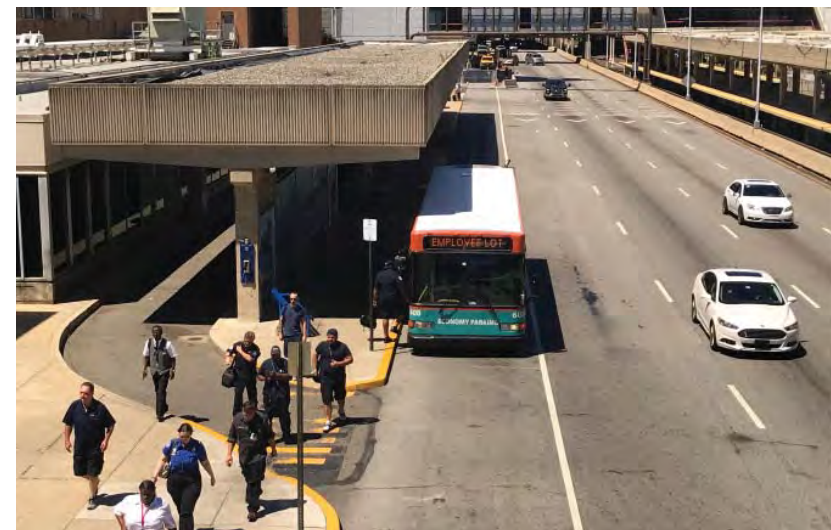
Better transit service and a vibrant station area would serve Eastwick residents and area businesses. The airport area is a major regional employment center, and greater transit service brings greater access to a wider workforce. PHL would benefit from the expanded span of service from the Airport Line to bring employees and passengers to terminals earlier and later in the day. Employees and passengers could make connections to get to the airport from a greater service area, particularly Southwest Philadelphia, than today.

Residents of Eastwick would experience broader mobility benefits compared to the PHL or Center City rail destinations than exists today. Opportunities to improve transit access for PHL customers exist through expanding connections between multiple modes at an Eastwick Intermodal Center. Some cities have policies in place to strengthen that transit connection to airports even further. For example, in Boston, Logan International Airport has instituted a policy that allows customers who access the airport by bus to go straight to the front of the security line. PHL, SEPTA and the City of Philadelphia might work toward a similar policy, or having the PHL employee shuttle stop at the Eastwick Intermodal Center as a way to enhance transit access.

Figure 20 | Lower Eastwick Public Land Strategy: Site 1 Development Approach



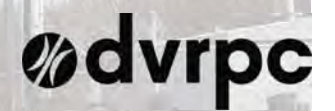
Source: PRA, Interface Studio, 2019.



Airport employees arriving to work on the PHL shuttle.



CHAPTER 3: **PROPOSAL**



SITE SELECTION

Several past studies have considered a transportation center in various locations near Eastwick including near 70th Street, on both sides of the 84th Street overpass, and on either side of the Island Avenue Bridge. The *2001 Eastwick Transportation Center Needs Assessment and Conceptual Design Study* examined the four locations on either side of the 84th Street and Island Avenue Bridge in detail.

Using multi-factor selection criteria, including ease of acquisition, auto access, relative cost, and joint development opportunities to name a few, the study deemed southwest of 84th Street, just slightly north of where the platforms are today, as the preferred site. Little has changed in terms of publicly available land, accessibility by major roads, visibility, and location of residential neighborhoods and areas available for development so the 84th Street site still benefits from these criteria.

Consideration was initially given in this study process to the Penrose Plaza which is generally considered the heart of the commercial "center" of the Eastwick neighborhood. However, the roadway network in this location makes auto access and visibility difficult, especially for bus movements. The significant grade difference between the Island Avenue Bridge over the Airport Line and the Island Avenue frontage road would make access for all modes challenging.

Penrose Plaza is also farther from some of the major employers such as PNC and the hotels along Bartram Avenue and has less transit service, with one bus route (Route 37) and the Trolley Route 36. The benefits of the site southwest of the 84th Street overpass outweighed Penrose Plaza.

Figure 21 | Site Selection



Figure 22 | Eastwick Intermodal Center Site

Aerial image source: City of Philadelphia aerial imagery, 2017

Figure 23 | Route 36 Loop Options

Aerial image source: City of Philadelphia aerial imagery, 2017

ROUTE 36 TROLLEY EXTENSION

Unlike the 2001 study, the present study proposes the Eastwick Intermodal Center almost exactly where it is today as opposed to relocating it to the north. Whereas previous studies have sited an Eastwick Intermodal Center slightly north of the existing platforms, we now know enough about Trolley Modernization to reconsider how trolley service is extended to the Eastwick Station.

Creating a transfer between Trolley Route 36, Regional Rail, bus routes, and shuttles requires extending trolley service approximately half a mile from Route 36's existing terminal at 80th Street and Island Avenue. The 2001 study proposed a Route 36 trolley extension running in mixed traffic along Mario Lanza Boulevard with a loop turnaround just northeast of the intersection with Crane Street.

Today, our preference is to separate trolleys from mixed traffic in this location using the existing historic trolley right-of-way between

Mario Lanza Boulevard and the Airport Line tracks, removing conflicts between trolleys and cars while improving safety and service reliability.

The project team considered several end-of-line options for Route 36 at Eastwick that are compatible with Trolley Modernization. It is currently unknown whether SEPTA will purchase single-ended (which can only move in a single direction) or double-ended vehicles (which have two sets of operator controls, allowing travel in both directions). A single-ended trolley requires a loop track at the end of the line to turn back in the other direction. Two at-grade options for loop tracks at Eastwick are explored in Figure 23, each of which have flaws significant enough that we consider them infeasible.

Option A would separate trolleys from vehicular traffic, but require approximately half a mile of non-revenue service at the end of every trip. Option B would require trolleys to enter mixed traffic in an unusual pattern, creating safety risks and delays.

Figure 24 | Stub-End Trolley Terminal, Sharon Hill

Aerial image source: City of Philadelphia Atlas, 2019

Double-ended trolleys would eliminate these drawbacks by using a stub-end terminal, as shown on this project's proposed site plan (see page 44). Because a double-ended trolley does not need the space to turn the entire vehicle around in order to change directions, it is more operationally versatile.

Double-ended vehicles are already used on SEPTA's Media/Sharon Hill Lines, in Delaware County. At the Sharon Hill end-of-line stop (see Figure 24), for example, a trolley needs only the width of a vehicle to end its trip before returning in the other direction.

At the 63rd & Malvern Loop (see Figure 25), on the other hand, single-ended Route 10 vehicles must enter an off-street loop, discharge passengers, then reenter the street whenever they reach the end of the

Figure 25 | Loop Trolley Terminal, 63rd & Malvern

Aerial image source: City of Philadelphia Atlas, 2019

line. This configuration—which is typical of City Transit Division trolley routes—uses more space, and requires trolleys to enter and exit traffic, sometimes at unsignalized locations.

A double-ended trolley end-of-line requires far less space and far less track work and infrastructure than a single-ended vehicle's end-of-line would need. This suggests that double-ended trolleys would offer similar end-of-line flexibility on all SEPTA trolley routes, most of which currently terminate at loop tracks.

This overall savings would have benefits to SEPTA's existing trolley system as well as to any extensions that might be considered elsewhere in the future. To realize these operational benefits, Trolley Modernization should include double-ended vehicles as the preferred vehicle fleet.

POTENTIAL RAIL CROSS SECTIONS:

The City of Philadelphia's rail right-of-way was a strong reason for the selection of the site southwest of the 84th Street underpass. Three potential cross sections are shown in Figure 26 that accommodate freight, trolley, and regional rail along with passenger boarding platforms within the right-of-way. All three cross sections assume that both trolley and Airport Line boarding is fully accessible. Each cross section represents a possible future arrangement. They vary in: arrangement of boarding islands to platforms; degree of separation of freight and passenger rail; required width; and, length of a pedestrian overpass to cross the railroad tracks.

Freight in Middle – Side Platforms

This cross section assumes freight is separated from SEPTA's passenger tracks and is aligned as the middle set of tracks. Side platforms would allow passengers to access Airport Line trains. Freight separation would require two interlockings—at least one would likely need to be at-grade due to physical restrictions. The at-grade interlocking(s) would require coordination between freight and passenger rail equal to that of today's shared rail so temporal restriction on passenger rail would likely still be required. This option would likely not allow for a greater span of Airport Line service.

- › Total right-of-way required: 117'
- › Airport Line passengers and passengers transferring between modes would need to use the overpass to cross the tracks once per round trip
- › Requires two elevators and a 77' overpass

Freight on East Side – Center Platform

This cross section separates freight from passenger rail, this time on the east, or Bartram Avenue side of the tracks. This alignment creates a center boarding platform for the Airport Line, accessible only through the use of an overpass. By aligning freight on the east side, only one interlocking is needed and could likely be grade-separated. If the interlocking could be grade-separated, operations between freight and passenger rail are freed up and could likely lift temporal restrictions on passenger rail. This option would likely allow for a greater span of Airport Line service.

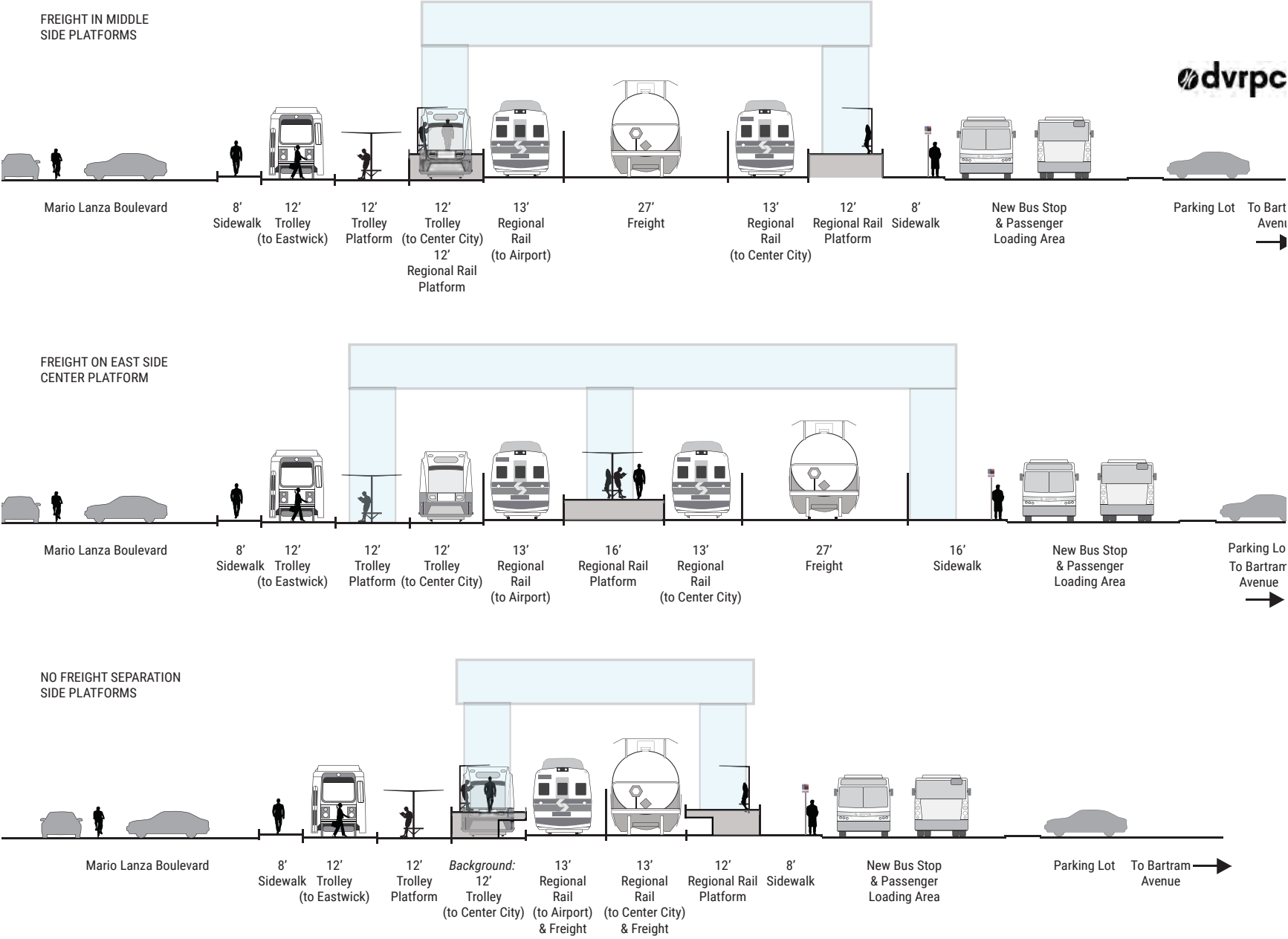
- › Total right-of-way required: 129'
- › Airport Line passengers and passengers transferring between modes would need to use the overpass to cross the tracks twice per round trip
- › Requires three elevators and a 109' overpass

No Freight Separation – Side Platforms

This cross section does not separate freight from passenger rail, rather, track continues to be shared, saving the expense of adding new interlockings but continuing the limits on Airport Line span of service. High-level, full length, ADA-accessible side platforms would need to be high and wide platforms to allow freight to pass. This type of platform has manual flip-up edges that reduce the gap between passenger cars and platform edges, but can be flipped up manually to accommodate freight clearances. High and wide platforms would require SEPTA staff to transition the platform daily at the beginning and end of each span of freight service, creating an additional operating expense for SEPTA, and a potential failure or conflict point with freight. This option would not allow for a greater span of Airport Line service.

- › Total right-of-way required: 129'
- › Airport Line passengers and passengers transferring between modes would need to use the overpass to cross the tracks once per round trip
- › Requires two elevators and a 59' overpass

Figure 26 | Potential Rail Cross Sections



PROPOSED SITE PLAN

The following section illustrates the EIC program. Site plan features are grouped based on whether their primary purpose is to access EIC, or to improve the public realm. Out of three possible cross sections, the site plan assumes the “Freight on East Side Center Platform” arrangement, with freight separated from passenger rail and a center platform, for SEPTA’s Airport Line because it achieves freight separation and likely requires just one interlocking, offering the most operational benefits at the lowest cost.

Figure 27 | Proposed Site Plan



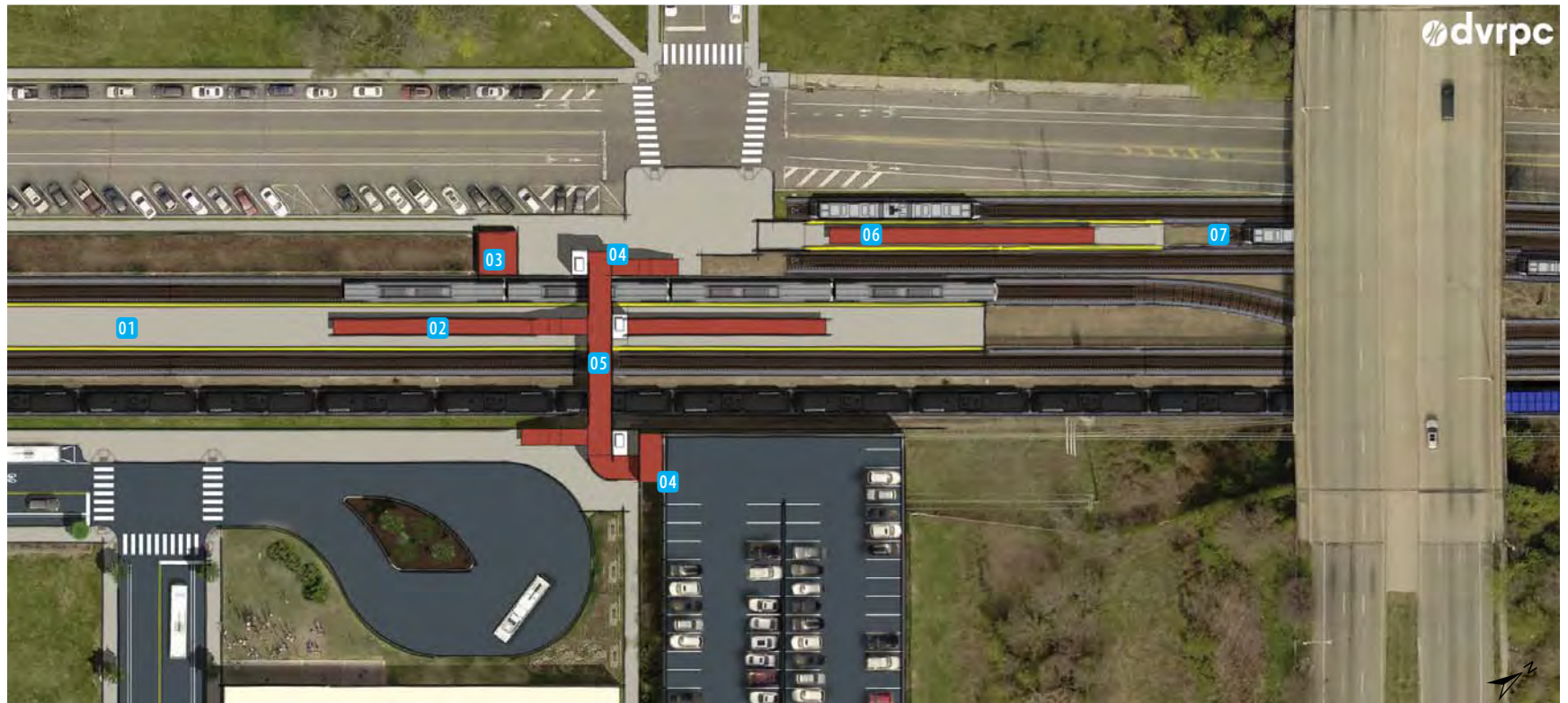
Aerial image source: City of Philadelphia aerial imagery, 2017

ACCESSING EIC

1. New intersection at Bartram Ave. and Tincum Blvd. that allows entry and exit by all vehicles from all directions. A new crosswalk is striped for pedestrians to cross Bartram Ave. on either side of Tincum Blvd.
2. Three tracks to separate SEPTA Airport Line trains from freight trains. (See page 43 for cross section details.)
3. Space for passengers to board/alight from up to three buses at once.
4. Expanded entrance at existing station drive, allowing right-in/right-out entry/exit by all vehicles, including buses.
5. Turnaround allowing bus movements in all directions, and passenger drop-off.
6. Parking (scalable up to structured) to serve both development and station.
7. Regional Rail station and trolley terminal. See page 45 for details.
8. 84th & Bartram intersection reconfigured to remove a southbound slip lane on 84th Street.

IMPROVING THE PUBLIC REALM

9. Proposed commercial transit-oriented development opportunity to comply with airport-area height restrictions.
10. Reconfigured intersection at Mario Lanza Blvd. and Crane St. to shorten pedestrian crossing distances, and additional sidewalks.
11. Green stormwater infrastructure.

Figure 28 | Station Terminal Detail

Aerial image source: City of Philadelphia aerial imagery, 2017

STATION TERMINAL DETAIL

Facilitating new transfer opportunities is the core transit goal of Eastwick Intermodal Center. This is accomplished by extending Trolley Route 36 to the current site of Eastwick Station on the Airport Line, and by consolidating bus stop and layover facilities at the same location.

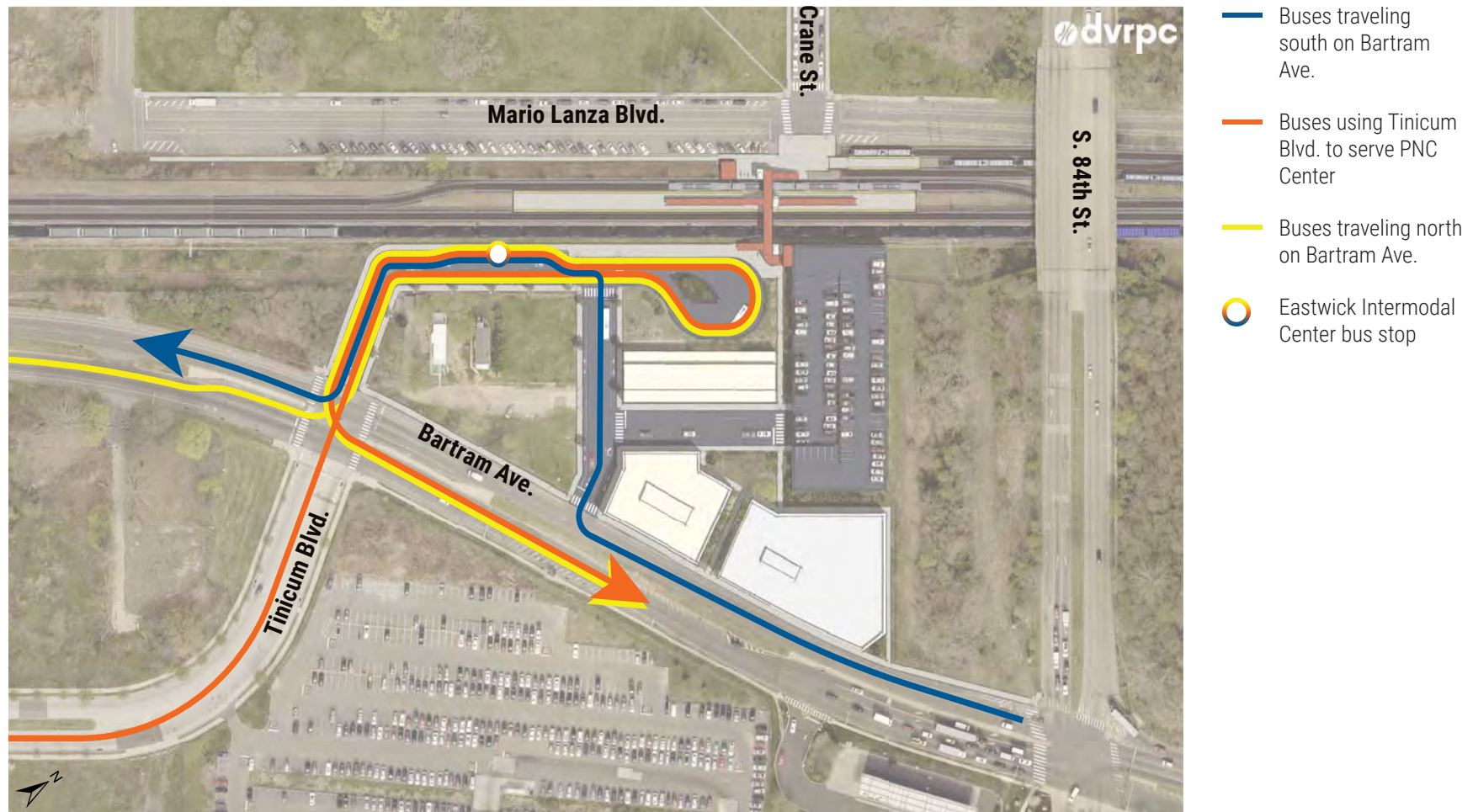
1. High-level, center platform serving both directions.
2. Regional Rail platform, including elevator/stair tower, and passenger facilities as required by SEPTA's service standards such as covered seating, a ticket vending machine, and/or a ticket sales booth.
3. SEPTA operator restrooms.
4. Bicycle parking using garage and pedestrian overpass as weather protection.
5. Elevator and stair tower serving both platform access overpass, and garage.
6. Trolley Route 36 terminal station platform with passenger facilities including overhead canopy and seating. Platform to be at least 160'-long to berth two trolley vehicles on either side.
7. Third trolley track with associated switches to allow for trolley vehicle storage without interfering with service.

BUS CIRCULATION

The proposed site plan maximizes operational flexibility for SEPTA bus routes, with the understanding that many SEPTA bus routes are expected to change in the near future stemming from the *Eastwick Station Regional Transit Hub Evaluation and Recommendations* study or during SEPTA's upcoming Bus Network Redesign.

The new site entrance at Tinicum Boulevard and Bartram Avenue functions as the main site entry for bus traffic, allowing entry and exit into the site from all directions. An internal loop allows buses to turn around and exit the site in all directions. An additional right-in/right-out intersection at the existing station driveway on Bartram Avenue is widened to allow buses to enter.

Figure 29 | Bus Circulation

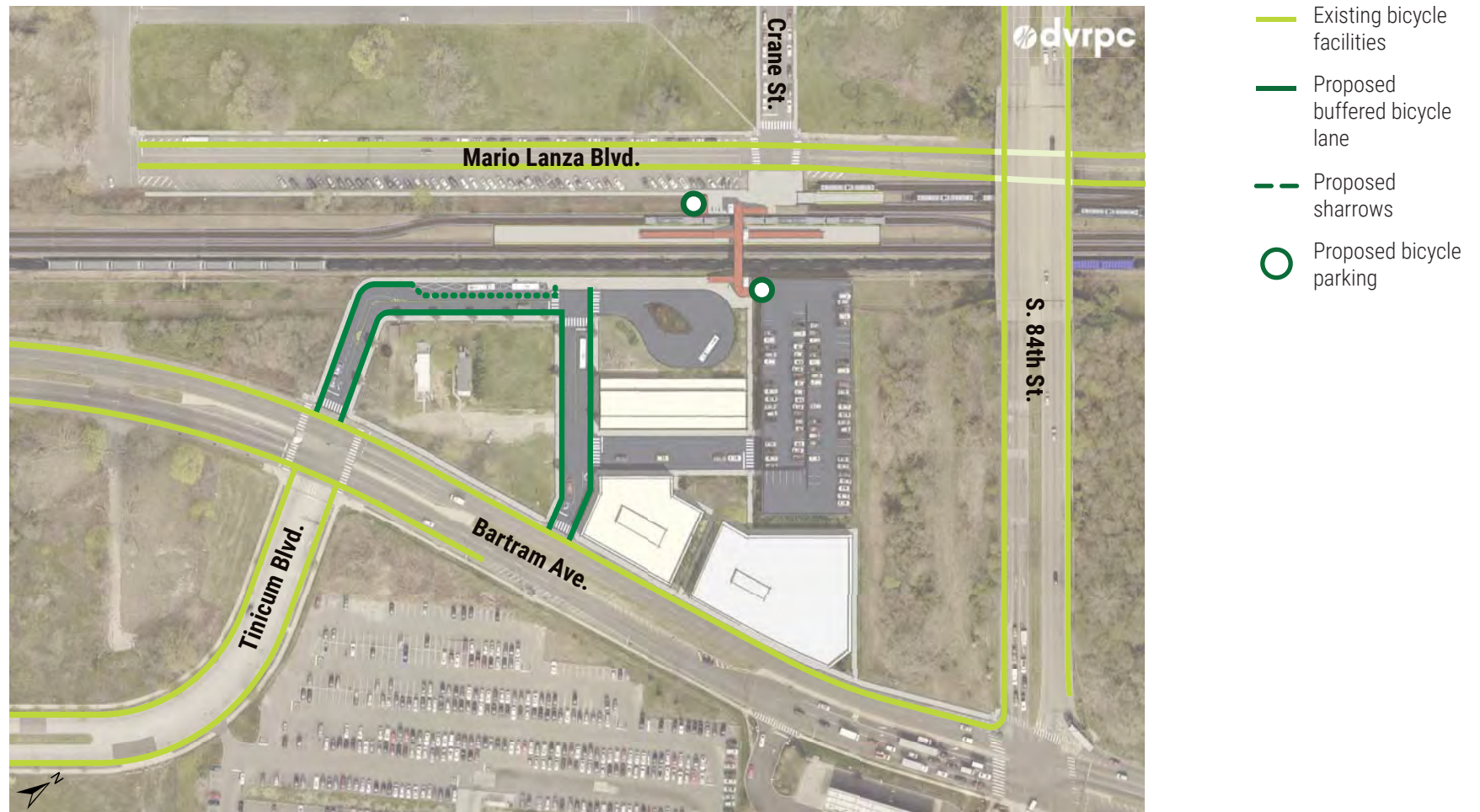


Aerial image source: City of Philadelphia aerial imagery, 2017

BICYCLE CIRCULATION

The EIC site plan proposes internal bicycle circulation that connects to existing bicycle lanes on Bartram Avenue. Bicycle parking is proposed at either end of the pedestrian overpass, and near the site's bus stop.

Figure 30 | Bicycle Circulation



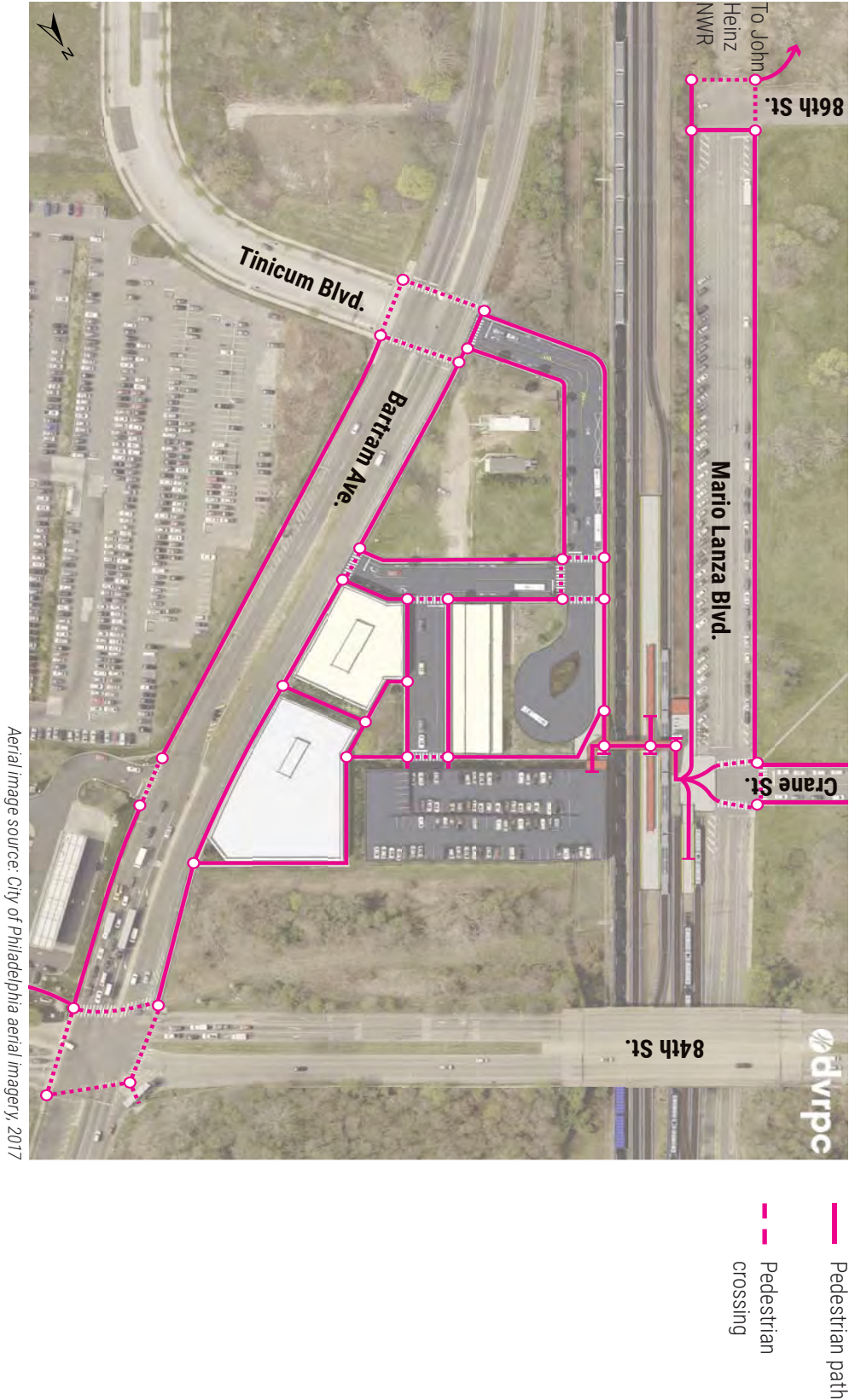
Aerial image source: City of Philadelphia aerial imagery, 2017

PEDESTRIAN CIRCULATION

The proposed site plan expands pedestrian connections within and adjacent to Eastwick Station. New connections include an additional crosswalk across Bartram Avenue at Tincum Boulevard, across Bartram Avenue at 84th Street, and a safe crossing of the rail right-of-way via the pedestrian overpass.

New sidewalks are proposed on the west side of Bartram Avenue, Mario Lanza Boulevard, and Crane Street.

Figure 31 | Pedestrian Circulation



Aerial image source: City of Philadelphia aerial imagery, 2017

IMPLEMENTATION

Realizing an Eastwick Intermodal Center that incorporates the elements shown in the proposed site plan will take action from many public and private organizations. By working together, including with the Eastwick community, the full potential benefits outlined in Chapter 2 can be realized. The implementation steps needed to realize the proposed site plan as shown are as follows:



● Assemble Real Estate for Eastwick Intermodal Center

Lead Agency: City of Philadelphia | Partners: SEPTA, PRA

Clarify current ownership of parcels needed for Eastwick Intermodal Center and negotiate an agreement to allow SEPTA and other partners to construct Eastwick Intermodal Center.

Rezone parcels at Eastwick Intermodal Center site to allow proposed station and development.

Execute terms of land agreement.

● Develop an Airport Transit Master Plan

Lead Agency: SEPTA | Partners: PHL, Amtrak, CSX, City of Philadelphia, utility providers

Conduct a feasibility study addressing options for providing higher frequency service to PHL. Existing limitations to the Airport Line to be evaluated include:

- > The need for a crossover at PHL terminals,
- > The need for crossovers at Eastwick Station to provide capacity for increased service,
- > Conflicting Northeast Corridor and SEPTA moves at PHIL Interlocking,
- > Single-track sections between PHIL Interlocking and 60th Street,
- > Track shared with freight between 60th and 90th Streets.

Design, engineer, and negotiate Airport Line or other improvements identified in the master plan, which may include:

- > A new crossover between Terminal A and the end of the line to allow for service in both directions at airport terminals,
- > Replace PHIL Interlocking to separate Airport Line and Northeast Corridor trains,
- > A second Airport Line track between PHIL Interlocking and 60th Street,
- > A separate freight third track between 60th and 90th Streets, and associated switches and/or grade separation.

Construct Airport Line improvements as identified in prior phases, which may include:

- > A new crossover between Terminal A and the end of the line to allow for service in both directions at airport terminals,
- > Additional crossovers at Eastwick Station,
- > Replace PHIL Interlocking to separate Airport Line and Northeast Corridor trains,
- > A second Airport Line track between PHIL Interlocking and 60th Street,
- > A separate freight third track between 60th and 90th Streets, and associated switches and/or grade separation.

Early Action**Intermediate Steps****Implementation****● Design and Build Eastwick Intermodal Center Station Infrastructure***Lead Agency: SEPTA | Partners: City of Philadelphia*

- > Add Eastwick Intermodal Center improvements to SEPTA's capital program.
- > Pursue additional capital funding through available local, state, or federal sources.

- > Design and engineer Regional Rail platforms, access drives, bus stops, and associated site improvements, accounting for climate resiliency.
- > Secure competitive federal and state funding opportunities.

Construct Eastwick Intermodal Center access, transit, and Regional Rail facilities.

● Extend Trolley Route 36 to Eastwick Intermodal Center*Lead Agency: SEPTA | Partners: City of Philadelphia*

Include double-ended trolley vehicles and an extension to Eastwick Station as planning assumptions for Trolley Modernization.

Design and engineer for Route 36 trolley extension, trolley station platform, and station amenities.

Construct Route 36 trolley extension and end-of-line station at Eastwick Intermodal Center.

● Use the Lower Eastwick Public Land Strategy as a Basis For Development and Community Outreach*Lead Agency: PRA | Partners: City of Philadelphia*

Include Eastwick Intermodal Center in geotechnical and development plans for the Public Land Strategy, in conversations with its steering committee, and in public outreach.

Work with a joint partner developer to design and market transit-oriented development at Eastwick Intermodal Center.

Construct joint venture development that includes SEPTA parking and direct public access between 84th Street and Eastwick Intermodal Center.

Early Action**Intermediate Steps****Implementation**

● Redesign the Eastwick Area Bus Network

Lead Agency: SEPTA | Partners: City of Philadelphia

Include Eastwick Intermodal Center as a planning assumption for the upcoming Comprehensive Bus Network Redesign.

- > Begin bus service transition from PNC to Eastwick Intermodal Center,
- > Implement free or very-low-cost transfers.

Initiate service to Eastwick Intermodal Center on SEPTA routes 37, 68, 108, and 115, as well as any future routes that serve the Eastwick neighborhood, Philadelphia International Airport, and area employers.

● Support Eastwick Intermodal Center as a Regional Priority

Lead Agency: DVRPC (through partner input) | Partners: SEPTA, City of Philadelphia

Assist agency partners in adding Trolley Route 36 extension to Eastwick to DVRPC's fiscally-constrained *Long-Range Plan*.

Support agency partners in securing funding for and developing Eastwick Intermodal Center.

Assist agency partners to include Eastwick Intermodal Center in the region's Transportation Improvement Program (TIP).

● Bring PHL Employees to Work via Eastwick Intermodal Center

Lead Agency: Philadelphia International Airport | Partners: SEPTA, City of Philadelphia, PRA

Define Eastwick Intermodal Center as a primary point of access for airport-area employees in PHL's ongoing master planning process.

Facilitate airport employee connections between Eastwick Station, SEPTA bus stops, and PHL destinations such as the employee parking lot through:

- > Marketing,
- > Supplementing SEPTA fares for employees, and,
- > Wayfinding.

- > Direct employee and customer access through Eastwick Intermodal Center.
- > Include an employee shuttle stop at Eastwick Intermodal Center.

Early Action

Intermediate Steps

Implementation

● Improve Bicycle and Pedestrian Infrastructure around Eastwick Station

Lead Agency: *City of Philadelphia* | Partners: *PennDOT, SEPTA*

Plan for safe bicycle infrastructure that connects Eastwick Station with the citywide bicycle network. (i.e., protected bicycle lanes on Bartram Avenue, 84th Street, and Mario Lanza Boulevard.)

Design and engineer bicycle and pedestrian connections between Eastwick Intermodal Center, including:

- > Safe pedestrian crossings of Bartram Avenue, 84th Street, and Mario Lanza Boulevard.
- > Safe cyclist access to the Eastwick Intermodal Center property from the surrounding bicycle network.

Construct additional bicycle and pedestrian connections that support multimodal access to Eastwick Intermodal Center.

● Connect Eastwick Intermodal Center to the John Heinz National Wildlife Refuge at Tinicum

Lead Agency: *U.S. Fish and Wildlife Service* | Partners: *City of Philadelphia, SEPTA, Pennsylvania Horticultural Society*

Plan and design a pedestrian and bicycle connection, including functional landscape elements, between existing Eastwick Station and the Heinz Refuge.

Construct a pedestrian and bicycle connection, including functional landscape elements, between Eastwick Station and the Heinz Refuge.

Provide appropriate wayfinding and bicycle amenities at Eastwick Intermodal Center to ensure access to Heinz Refuge.

EASTWICK INTERMODAL CENTER

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ABSTRACT: Plans from the early 2000s to expand the Southeastern Pennsylvania Transportation Authority (SEPTA) Eastwick Regional Rail Station into an Intermodal Center have resurfaced in light of the Philadelphia City Planning Commission's (PCPC) recommendation in its 2016 *Lower Southwest District Plan* to implement an Eastwick Intermodal Center and of SEPTA's upcoming Trolley Modernization. With Trolley Modernization comes the opportunity to evaluate trolley extension proposals, like the Route 36 trolley to Eastwick Station, and the value they might yield. DVRPC prepared this report for SEPTA and the City of Philadelphia to evaluate what opportunities are created by an Intermodal Facility, at or near Eastwick Station, within the approximately decade-long Trolley Modernization timeframe.

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